PROPERTY LINE PRIMARY RESIDENCE REQUIRED SIDE YARD REQUIRED SIDE YARD SETBACK PER SETBACK PER THE UNDERLYING ZONE DISTRICT THE UNDERLYING ZONE DISTRICT a) LOT SHALL BE GRADED TO DRAIN WATER AWAY FROM ALL FOUNDATIONS AT A SLOPE OF 5% WITHIN 10 FEET OF THE BUILDING. (CRC SECTION R401.3) b) IMPERVIOUS SURFACES WITHIN 10' OF THE BUILDING FOUNDATION SHALL PROPERTY LINE c) ALL SITE GRADING OUTSIDE OF THE BUILDING ENVELOPE IS REQUIRED TO

Provide Special Inspection for Field Verification and Diagnostic Testing performed

I) Ducts located entirely in conditioned space confirmed by duct leakage testing

After installing Water Heating Systems, Fenetration, and HVAC equipment, the installer shall submit the Installation Certificate" (CF-2R form), completed and

signed by the installer, listing the equipment installed, (manufacturer, model, and

efficiencies, U-Values and SHGC-values, etc.) and that it meets or exceeds the

"REGISTERED" copies of the CF-2R and CF-3R forms shall be submitted prior to

prior to final inspection, signed by certified by the installer(s) for the CF-2R form, and the HERS Rater, for Field Verification and Diagnostic Testing on the CF-3R

SLOPE A MINIMUM OF 2% AWAY FROM BUILDING.

BE A MINIMUM OF 0.5% DIRECTED TOWARDS THE STREET.

requirements of the energy documentation. (CEES section 10-103(a)(3))

(Registered copies shall be provided when HERS verification is required.)

by a third party certified HERS Rater for the following:

a) Quality insulation installation

b) Indoor air quality ventilation

g) Verified refrigerant charge

j) Verified heat pump rated heating capacity

form. (CEES 10-103(a)(3) and 10-103(a)(5))

h) Fan efficacy watts / CFM

k) Duct leakage testing

c) Kitchen range hood

d) Minimum air flow

e) Verified EER

f) Verified SEER

i) Verified HSPF

PRIMARY STREET

AARON NEUBERT ARCHITECTS

ADU PROGRAM

ARCHITECT:

AS NOTED

AS NOTED

3"=1-0"

3"=1-0"

3"=1-0"

AS NOTED

1/4" = 1'-0"

1/2" = 1' - 0"

1/2" = 1' - 0"

1/4" = 1'-0"

1/2" = 1'-0"

1/2" = 1'-0"

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AS NOTED

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N/A

N/A

N/A

N/A

AS NOTED

AS NOTED

AS NOTED

AS NOTED AS NOTED N/A

3/16"=1'-0"

WINDOW NUMBER

DOOR NUMBER

ROOM TAG

WALL TYPE

N/A

N/A

N/A

N/A

N/A

N/A

DRAWING INDEX

A.002 GENERAL NOTES

A.020c TYPICAL DETAILS

A.020g TYPICAL DETAILS

A.020s TYPICAL DETAILS

A.021 TYPICAL DETAILS

A.100c FLOOR PLAN

A.100g FLOOR PLAN

A.100s FLOOR PLAN

A.101c ROOF PLAN

A.101g ROOF PLAN

A.101s ROOF PLAN

A.110c REFLECTED CEILING PLAN

A.110g REFLECTED CEILING PLAN

A.110s REFLECTED CEILING PLAN

A.200c EXTERIOR ELEVATION

A.200g EXTERIOR ELEVATION

A.200s EXTERIOR ELEVATION

A.400 INTERIOR ELEVATIONS

A.401c INTERIOR ELEVATIONS

A.401g INTERIOR ELEVATIONS

A.401s INTERIOR ELEVATIONS

LIGHTING SCHEDULE

LIGHTING SCHEDULE

LIGHTING SCHEDULE

**BUILDING SECTIONS** 

BUILDING SECTIONS

BUILDING SECTIONS

S.010 TYPICAL CONCRETE DETAILS

APPLIANCE SCHEDULE / PLUMBING SCHEDULE

S.000 STRUCTURAL GENERAL NOTES & SHEET LIST

S.021 TYPICAL WOOD DETAILS - SHEAR WALLS

S.022 TYPICAL WOOD DETAILS - SHEAR WALLS

S.023 TYPICAL WOOD DETAILS - DIAPHRAGMS

S.110c CEILING FRAMING PLAN - CRAFTSMAN

S.200g ELEVATIONS AND SECTIONS - GABLE

S.110g CEILING FRAMING PLAN - GABLE

T24-2 TITLE 24 ENERGY ANALYSIS

M-1.01 MECHANICAL LAYOUT

P1.01 WATER SUPPLY LAYOUT

P1.02 GAS LAYOUT

P1.03 DRAINAGE LAYOUT

E-1.01 LIGHTING LAYOUT

PV-1 PLOT PLAN & LAYOUT

PV-2 ELECTRICAL DESIGN

PROJECT DATA

ZONING:

BUILDING AREA:

LOT COVERAGE:

REQUIRED YARDS:

BUILDING HEIGHT:

OCCUPANCY:

LEGEND

NUMBER OF STORIES:

PV-3 EQUIPMENT SPECIFICATION

PV-4 EQUIPMENT SPECIFICATION

E-2.01 POWER LAYOUT

MM-1 TITLE 24 MANDATORY MEASURES

MM-2 TITLE 24 MANDATORY MEASURES

M-0.00 MECHANICAL SPECS, LEGENDS & SYMBOLS

P0.00 PLUMBING SPECS, DETAILS & SYMBOLS

E-0.00 ELECTRICAL SPECS, LEGEND & SYMBOLS

PROJECT DESCRIPTION: ACCESSORY DWELLING UNIT

RE/ RS-1/ RS-2/ RS-3/ RS-4/ RS-5

(N) FIRST LEVEL = 514 SF /1

SINGLE STORY RESIDENTIAL

R3 OCCUPANCY GROUP

EAST-WEST REFERENCE LINE

NORTH-SOUTH REFERENCE LINE

PER THE UNDERLYING ZONE DISTRICT

PER THE UNDERLYING ZONE DISTRICT

30'-0" MAXIMUM HEIGHT ENVELOPE

PROJECT ADDRESS: CITY OF FRESNO

CONSTRUCTION TYPE: TYPE V-B

E-0.01 ELECTRICAL SINGLE LINE DIAGRAM

S.020 TYPICAL WOOD DETAILS - GENERAL AND STUD WALLS

S.100c FOUNDATIONS AND FRAMING PLANS - CRAFTSMAN

S.100s FOUNDATIONS AND FRAMING PLANS - CONTEMPORARY

S.100g FOUNDATIONS AND FRAMING PLANS - GABLE

S.110s CEILING FRAMING PLAN - CONTEMPORARY

S.200c ELEVATIONS AND SECTIONS - CRAFTSMAN

S.200s ELEVATIONS AND SECTIONS - CONTEMPORARY

AND ROOF CONNECTIONS

A.001 DRAWING INDEX / SITE PLAN / SITE SECTION

WINDOW SCHEDULE / ELEVATIONS

WINDOW SCHEDULE / ELEVATIONS

WINDOW SCHEDULE / ELEVATIONS

DOOR SCHEDULE / ELEVATIONS

DOOR SCHEDULE / ELEVATIONS

DOOR SCHEDULE / ELEVATIONS

CITY OF FRESNO PLANNING AND DEVELOPMENT DEPARTMENT 2600 FRESNO STREET, 3RD FLOOR FRESNO, CA 93721

> AARON NEUBERT ARCHITECTS, INC. 2814 ROWENA AVENUE, SUITE ONE

LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900

AARON NEUBERT CA# C-29005

STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC. 600 WILSHIRE BOULEVARD, SUITE 760 LOS ANGELES, CALIFORNIA 90017 P. 213.627.6687

MEP ENGINEER:

INNODEZ DESIGN AND ENGINEERING 726 FOXBROUGH PLACE PLEASANTON, CALIFORNIA 94566 P. 424.414.0997

REVISION: DATE:

/  $\angle$  REVISION #2 06.03.22 PLAN CHECK CORRECTIONS

REVISION #1 04.04.22 PLAN CHECK CORRECTIONS



Project No. 2104 ADU PROGRAM CITY OF FRESNO CALIFORNIA

DRAWING TITLE:

SITE PLAN ADU 02

514 SF

DATE: JUNE 3, 2022

SCALE: 1/4 = 1' - 0"

DRAWN BY:

#### GENERAL NOTES

Code Reference:	
California Building Code 2019	(CBC
California Residential Code 2019	(R)
California Green Building Standard Code 2019	(CGB
California Mechanical Code 2019	(CMC
California Electrical Code 2019	(CEC
California Plumbing Code 2019	(CPC

Code Compliance and Inspection Per City Of Fresno: 1. All construction shall Conform to California Building Code 2019 pertaining to Type VB construction and all other applicable

2. An approved set of drawings bearing the stamp of the City of Fresno Building and Safety Department shall be available on the construction site at all times. All appropriate and necessary Department of Building and Safety permits must be posted at all

#### **General Construction Notes:**

- 1. Prior to ordering any materials or doing any work, each trade shall verify all measurements at the building and shall be responsible for the correctness of the same. No extra charge or compensation will be allowed on account of differences between actual dimensions and the measurements indicated on the drawings, any discrepancies between the drawings and field conditions which may be found shall be submitted to the Architect for consideration and clarification before proceeding with the work. The contractor shall be responsible for any
- deviation from the Contract Documents. 2. All of the Architect's drawings and construction notes are complimentary and what is called for will be binding as if called for by all: any work shown or referred to on any one drawing shall be provided as though shown on all drawings.
- 3. The work to be performed consists of furnishing all labor, equipment, tools, transportation, supplies, fees, materials and services in accordance with these notes and drawings; and includes performing all operations necessary to construct and install complete, in satisfactory condition, the various materials and equipment at the locations shown.
- 4. All dimensions to from stud to stud; or center of stud to center of stud (unless otherwise noted).
- 5. Contractor to field verify all dimensions and elevations for clearances and notify Architect of any discrepancies between
- Drawings and actual conditions. 6. Full size or large scale details or drawings shall govern small
- scale drawings which they are intended to amplify. 7. The standard specifications of the manufacturer for products called for in the drawings and notes are hereby made a part of these notes with the same force and effect as though herein written out in full.
- 8. All materials required for the performance of this work shall be new and of the best quality of the kinds specified. The use of old or second hand materials is strictly forbidden, except for locations on the drawings that refer to removal and relocation of materials or equipment. Materials shall be used in accordance with the manufacturer's specifications. The contractor shall submit all product warranties. The contractor
- will warranty all work as per applicable regulations. 9. Plumbing, Electrical and Mechanical work shall be performed by a licensed member of the respective trade.
- 10. All insurance costs and costs associated with permits, inspection and sign-offs shall be at the contractors cost. 11. Certificates of insurance are required from the licensed electrician, licensed plumber, and the general contractor for
- the amounts specified by the contract. 12. All contractors, sub-contractors and others working on the project shall submit waivers of liens signed at the completion of their work.
- 13. The premises and job site shall be maintained in a reasonably neat and orderly condition and kept free from accumulations of waste materials and rubbish during the entire construction period. The contractor shall remove all crates, cartons and other trash from the work areas each day, and shall be responsible for its proper disposal. The premises shall be protected throughout construction and shall be turned over in spotless and orderly condition. All fixtures and equipment will be left in undamaged, bright, clean and polished condition.
- 14. Construction work will be confined to the areas designated on the drawings and will not create dust, dirt or other inconveniences to other spaces.
- 15. Provide approved job site toilet that is available to anyone involved in construction activities.
- 16. The construction shall not restrict a five-foot clear and unobstructed access to any water or power distribution facilities (power poles, pull-boxes, transformers, vaults,
- pumps, valves, meters, appurtenances, etc.) or to the location of the hook-up. The construction shall not be within ten feet of any power lines-whether or not the lines are located on the property. Failure to comply may cause construction delays
- 17. Nothing shall interfere with the rights, comforts, or conveniences of any neighbors. No construction work, repair work, or other installation involving noise shall be conducted except on city approved work days/hours, unless such construction or repair work is necessitated by an emergency,
- or otherwise agreed to by owner. 18. Provide all temporary and permanent shoring as required in structural drawings. 19. All wood floors to be secured as required to prevent creaking.
- All holes to be patched. 20. Provide gutters and downspouts as required.
- 21. Weatherstrip exterior doors from heated spaces. 22. Upon completion of project, premises shall be left broom clean, swept free of dirt and dust, all glass to be clean, all fixtures and appliances made fully operational, all systems, (electrical, plumbing, hvac, etc.) to be made fully operational and balanced. All warranties and manuals of systems
- reviewed with and given to owner. 23. All work shall be subject to final inspection by the Architect. 24. A copy of the evaluation report and/or conditions of listing
- shall be available at the job site. 25. Materials delivered to the construction site shall be protected
- from rain or other sources of moisture. 26. An Operation and Maintenance Manual for any newly installed equipment, appliances, HVAC system, photovoltaic system, electric vehicle chargers, water heating system, landscape irrigation and other major appliances and equipments, shall be provided in the building at the time of final inspection.

#### Moisture Protection:

- Flash and counter-flash at all roof to wall conditions. 2. G.I. flash and caulk wood beams projecting form exterior wall or roof surfaces.
- 3. All exterior finish materials shall be applied over minimum 30# asphalt saturated felt, unless otherwise noted.
- 4. Flash all exterior openings with approved waterproof building paper to extend at least 3" under the building paper behind the wall covering. . Shower and bathtub wall surrounds shall be stone/tile as
- noted, to a minimum 6'-8" a.f.f. and shall also extend 4" beyond the face of shower pan or tub. 6. Bathtub and shower floors, walls above bathtubs with a showerhead, and shower compartments shall be finished with a nonabsorbent surface. Such wall surfaces shall extend to a

height of not less than 6 feet above the floor (R 307.2)

- 1. All building materials stored at the construction site and/or inside the building are to be secured in a locked area. Access to such areas to be controlled by the Owner and/or the General Contractor.
- equipment requirements. 2. All materials are to be stored in an orderly manner. 3. All flammable materials to be kept tightly sealed in their design-built with full coordination between the General respective containers. Such materials are to be kept away
- from all heat sources. 4. All flammable materials to be used and stored in an adequately ventilated space.
- 5. All electrical power to be shut off where there is exposed
- 6. All electrical power in the construction area to be shut off after 7. The contractor will at all times make sure that there is no
- leakage of natural gas in the building, or any flammable gas used in construction
- 8. Provide a class A,B or C fire-retardant roof covering per Section (R 902.1).
- 9. On site fire protection equipment (such as extinguisher) will be kept readily available at all times. 10. If fire sprinkler system is required, fire sprinkler system shall
- 11. In combustible construction, fire blocking shall be provided to cut off all concealed draft openings (both vertical and horizontal) and to form an effective fire barrier between stories, and between a top story and the roof space. (R

be approved by Plumbing Division prior to installation.

- 12. Enclosed accessible space under stair shall have walls, under-stair surface and any soffits protected on the enclosed side with 1/2 inch gypsum board. (R302.7) 13. Smoke detectors shall be provided for all dwelling units
- intended for human occupancy, where a permit is required for alterations, repairs or additions. (R 314.2) 14. Where a permit is required for alterations, repairs or additions,
- existing dwellings or sleeping units that have attached garages or fuel-burning appliances shall be provided with a carbon monoxide alarm in accordance with Section R315.2. Carbon monoxide alarms shall only be required in the specific dwelling unit or sleeping unit for which the permit was obtained. (R 315.2)
- 15. An approved smoke alarm shall be installed in each sleeping room & hallway or area giving access to a sleeping room, and on each story and basement for dwellings with more than one story. Smoke alarms shall be interconnected so that actuation of one alarm will activate all the alarms within the individual dwelling unit. In new construction smoke alarms shall receive their primary power source from the building wiring and shall be equipped with battery back up and low battery signal
- 16. An approved carbon monoxide alarm shall be installed in dwelling units and in sleeping units within which fuel-burning appliances are installed and in dwelling units that have attached garages. Carbon monoxide alarm shall be provided outside of each separate dwelling unit sleeping area in the immediate vicinity of the bedroom(s) and on every level of a dwelling unit including basements. (R 315.3)

#### **Exits and Stairways:**

- 1. The means of egress shall provide a continuous and unobstructed path of vertical and horizontal egress travel from all portions of the dwelling to the exterior of the dwelling at the required egress door without requiring travel through a garage. The required egress door shall open directly into a public way or to a yard or court that opens to a public way. (R 311.1)
- 2. At least one door shall be 36" wide by 80" high. (R 311.2) 3. Provide minimum 32" wide doors to all interior accessible rooms. (R 311.2)
- The entry/exit door must open over a landing not more than 1.5" below the threshold. Exception: Providing the door does not swing over the landing. Landing shall be not more than 7.75" below the threshold. Storm and screen doors are permitted to swing over all exterior stairs and landings.
- 5. Landing at a door shall have a length measured in the direction of travel of no less than 36". (R 311.3)
- 6. A landing shall be provided at the top and bottom of stairways. (R 311.7.6)
- 7. Stairway details: a. 7.75" maximum rise & minimum 10" run. (R 311.7.5)
- b. Minimum 6'-8" headroom clearance. (R 311.7.2) c. Minimum 36" clear width. (R 311.7.1) d. Handrails 34" to 38" high above tread nosing
- (R 311.7.8.1) Handgrip portion of handrail shall not be less than 1.25" and no more than 2" cross- sectional dimension having a smooth surface with no sharp corners. (R 311.7.8.5)
- f. Maximum 4" clear spacing opening between rails. 8. All interior and exterior stairways shall be illuminated. (R 303.7)
- 9. For glass handrails and guards, the panels and their support system shall be designed to withstand the loads specified in Chapter 16 of CBC. A safety factor of four shall be used. The minimum nominal thickness of the glass shall be 1/4 inch. (CBC 2407)
- 10. Provide emergency egress from sleeping rooms and basements. Show details on plans. Minimum - 24" clear height, 20" clear width, 5.7 sf minimum area (5.0 sf at grade level) & 44" maximum to sill. (R 310.2.1)

#### **Mechanical Notes: Environmental Quality:**

Contractor and the Architect for sizing and placement of

All duct and other related air distribution component openings

shall be covered with tape, plastic, or sheet metal until the

final startup of the heating, cooling and venting equipment.

5. Clothes dryer moisture exhaust ducts shall terminate outside

for every elbow in excess of two. (CMC 504.4.2.1)

the building and have a back-draft damper. Exhaust duct is

limited to 14'-0" with two elbows. This shall be reduced 2'-0"

1. Check existing system with reference to new work to be done.

Re-route and /or replace portions (including service) as

equipment indicated, including light bulbs, and install any

3. Non-metallic sheathed cable shall be concealed or protected.

6'-0" of all sink locations, and all kitchen receptacles

6. All fixtures, devices and equipment shall comply with

7. At least one light outlet (wall switch controlled) shall be

applicable regulations.

[NEC 210-70(a)]

service) as necessary

Plumbing Notes:

(R 306.4)

water consumption.

(CGBC 4.303.1.3.2)

5. Central heating equipment requires individual branch circuits.

installed on the exterior side of outdoor entrances and exits.

1. Check existing plumbing system with reference to new work

to be done. Re-route and/or replace portions (including

2. Furnish and install all fixtures indicated, complete for normal

3. All drain lines & waste lines from second floor to be cast iron.

4. An approved seismic gas shutoff valve will be installed on the

fuel gas line on the down stream side of the utility meter and

containing the fuel gas piping. Separate plumbing permit is

sewer or to an approved sewage disposal system. (R 306.3)

tubs and washing machine outlets shall be provided with hot

and cold water and connected to an approved water supply.

Existing shower heads and toilets must be adapted for low

8. Water heater shall be anchored or strapped to resist horizontal

heaters, forced air units, furnaces) located in confined spaces

tight construction (basement) shall conform to the provisions

(enclosures, compartments, utility rooms) within unusually

displacement due to earthquake motion. (CPC 2019)

9. Combustion air supplied to fuel burning appliances (water

10. The flow rates for all newly installed plumbing fixtures shall

comply with the maximum flow rates in (CGBC 4.303)

showerhead, the combined flow rate of all the showerheads

gallons per minute at 80 PSI or the shower shall be designed

to only allow one showerhead to be in operation at a time.

shall not exceed the maximum allowable flow rate of 1.8

11. When single shower fixtures are served by more than one

7. Provide ultra low flush water closets for all new construction.

5. Plumbing fixtures are required to be connected to a sanitary

6. Kitchen sinks, lavatories, bathtubs, showers, bidets, laundry

be rigidly connected to the exterior of the building or structure

operation. Install any fixtures provided by owner.

125-volt, single phase, 15-and 20- amp bathroom, laundry,

2. Furnish and install all outlets, switches, fixtures and

fixtures and equipment furnished by owner.

with applicable regulations.

(CGBSC 4.504.1)

Electrical Notes:

equipment. All fixtures, devices and equipment shall comply

- 1. Architectural paints and coatings, adhesives, caulks and 1. Check existing mechanical system with reference to work being done. Replace existing equipment and ducts as sealants shall comply with the Volatile Organic Compound
- (VOC) limits listed in Tables (CGBSC 4.504.2.1 4.504.2.3) 2. Annular spaces around pipes, electric cables, conduits or 2. Refer to T24 energy notes for heating & air conditioning 3. Mechanical System: Units, ducting and grilles to be
  - other openings in sole/bottom plates at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or similar (CGBSC 4.406.1)
  - 3. Provide Building Operations and Maintenance at the time of final inspection and placed in the building. (CGBSC 4.410.1) 4. If Fireplace is installed, fireplaces shall be direct vent sealed

combustion-type. Indicate on the plans the manufacturer

- name and model number. (CGBSC 4.503.1) 5. At the time of rough installation, or during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheet metal, or other acceptable methods to reduce the amount of water, dust and debris that may enter the
- 6. Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19% moisture content. Insulation products that are visibly wet or have high moisture content shall be replaced or allowed to dry prior to enclosure

system. (CGBSC 4.504.1)

- in wall or floor cavities. (CGBSC 4.505.3) All mechanical exhaust fans in rooms with a bathtub or shower shall comply with the following: 4. Provide ground-fault-circuit-interrupters (GFI) protection for all a. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building. garage and exterior receptacles, countertop receptacles within b. Fans must be controlled by a humidity control capable of
  - a maximum of 80% unless functioning as a component of a whole house ventilation system. (CGBSC 4.506.1) 8. Verification of compliance with these sections must be provided at the time of final inspection and shall be

adjustment between relative humidity ranges of ≤50% to

- documented on the Building Operations and Maintenance Manual a. Adhesives, sealants and caulks shall meet or exceed the standards outlined in Section 4.504.2.1 and comply with the VOC limits in Tables 4.504.1 and 4.504.2 as applicable. (CGBSC 4.504.2.1) b.Paints and coatings shall meet or exceed the standards
  - outlined in Section CGBSC 4.504.2.2 and comply with the VOC limits in Table 4.504.3. (CGBSC 4.504.2.2) c. Aerosol paints and coatings shall meet or exceed the standards outlined in Section 4.504.2.3. (CGBSC
- 4.504.2.3) d. All carpet installed in the building interior shall meet the testing and product requirements of one of the following: d.1. Carpet and Rug Institute's Green Label Plus Program
- d.2. California Department of Public Health Standard Method for the testing of VOC Emissions (Spec 01350) OR
- d.3. NSF/ANSI 140 at the Gold Level OR d.4. Scientific Certifications Systems Indoor Advantage Gold (CGBSC 4.504.3)
- e. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label Program. Carpet adhesives shall not exceed a VOC limit of 50 g/L. (CGBSC 4.504.3.1, 4.504.3.2) f. A minimum of 80% of floor area receiving resilient flooring
- shall comply with one or more of the following: f.1. VOC emission limits defined in the CHPS High Performance Products Database OR f.2. Products compliant with CHPS criteria certified
- under the Greenguard Children & Schools program f.3. Certification under the RFCI FloorScore Program OR f.4. Meet the California Department of Public Health Standard Method for the Testing of VOC Emissions.
- (CGBSC 405.4.4) g.Composite wood products (hardwood plywood, particleboard and MDF) installed on the interior or exterior of the building shall meet or exceed the standards outlined in Table 4.504.5. Verification of compliance with these sections must be provided at the time of inspection. (CGBSC 4.504.5)

- 1. All glass and glazing shall comply with applicable codes and must be labeled safety glazing at hazardous locations defined as: glazing at all doors, bath & shower enclosures, glazing within a 24" arc of a door edge, panels over (9) square feet with the lowest edge less than 18" a.f.f. and having a top edge greater than 36" a.f.f., glazing located within 5'-0" from top or bottom of stairway with bottom edge less than 60" a.f.f. 2. All exterior glazing shall be dual-glazed unless otherwise
- 3. Unit Skylights shall be tested and approved by an approved independent laboratory, and bear a label identifying manufacturer, performance grade rating and approved inspection agency to indicate compliance with the requirements of AAMA/WDMA/CSA010/J.S.2/A440. (R 308.6.9)
- 4. Skylights and sloped glazing shall comply with section (R 308.6)
- Every space intended for human occupancy shall be provided with natural light by means of exterior glazed openings in accordance with Section R 303.1 or shall be provided with artificial light that is adequate to provide an average illumination of 6 foot-candles over the area of the room at a height of 30 inches above the floor level. (R 303.1) 6. Glazing in the following locations shall be safety glazing conforming to the human impact loads of Section R 308.3
- a. Fixed and operable panels of swinging, sliding and bi-fold door assemblies.

(see exceptions) (R 308.4).

b. Glazing in an individual fixed or operable panel adjacent to a door where the nearest vertical edge is within a 24-inch arc of either vertical edge of the door in a closed position and whose bottom edge is less than 60 inches above the floor or walking surface.

c. Glazing in an individual fixed or operable panel that

- meets all of the following conditions: 1.) Exposed area of an individual pane greater than 9 square feet.
- 2.) Bottom edge less than 18 inches above the floor. 3.) Top edge greater than 36 inches above the floor. 4.) One or more walking surfaces within 36 inches
- horizontally of the glazing. d. Glazing in railings. e. Glazing in enclosures for or walls facing hot tubs,
- whirlpools, saunas, steam rooms, bathtubs and showers where the bottom edge of the glazing is less than 60 inches measured vertically above any standing or walking surface. f. Glazing in walls and fence adjacent to indoor and
- outdoor swimming pools, hot tubs and spas where the bottom edge of the glazing is less than 60 inches above a walking surface and within 60 inches, measured horizontally and in a straight line, of the water's edge. g. Glazing where the bottom exposed edge of the glazing is less than 36 inches above the plane of the adjacent walking surface of stairways, landings between flights

of stairs and ramps.

h. Glazing adjacent to the landing at the bottom of a stairway where the glazing is less than 36 inches above the landing and within 60 inches horizontally of the bottom tread.

#### Green Building Standards:

- Provide certification for the following CALGreen components. Documentation shall be required prior to City inspections as noted below:
- a) Indoor Water Use (final inspection) b) Moisture Content of Building Materials by Third Party Special Inspector (insulation inspection) c) Adhesive and Sealant VOC (final inspection) d) Paints and Coatings VOC Limits (final inspection)
- e) Composite Wood Products (frame inspection) f) Carpet and Flooring Certification (final inspection) 2. Plumbing fixtures and fixture fittings shall conform to section 4.303.1 for water conserving indoor water use: a) Water Closets shall not exceed 1.28 gallons per flush
- b) Showerheads: Single head not more than 1.8 gal/min at 80 psi Multiple heads serving one shower shall have a combined rate not to exceed 1.8 gal/min at 80 psi.
- c) Lavatory Faucets shall have a minimum flow rate not to exceed 0.8 gal/min at 20 psi and a maximum of 1.2 gal/min at
- d) Kitchen Faucets shall have a maximum flow rate not to exceed 1.8 gal/min at 60 psi Exception: Kitchen faucets may temporarily increase the flow rate above the maximum, but not to exceed 2.2 gal/min at 60 psi maximum, but not to exceed 2.2 gal/min at 60 psi and must default back to the 1.8 gal/min
- 3. Annular spaces around pipes, electrical cables, conduits, or other openings in sole/bottom at exterior walls shall be protected against the passage of rodents by closing such openings with cement mortar, concrete masonry or similar method approved by the enforcing agency. (CALGreen 4.406.1)
- 4. Wall and floor framing members shall not be enclosed when moisture content exceeds 19%. Documantation shall be provided at the time of insulation inspection, certifyinh moisture content of framing members, following the
- procedures outlined in CALGreen 4.505.3. 5. Insulation products which are visibly wet or have high moisture content shall be replaced or allowed to dry per the manufacturer's drying recommendations, prior to enclosure of wall and floor cavities. (CALGreen 4.505.3) 6. Bathroom exhaust fans that are not a component of the whole house ventilation system must be capable of adjustment between a relative humidity range ≤50 percent to a maximum

of 80 percent. (CALGreen 4.506.1)(R303.3.1)



**AARON NEUBERT ARCHITECTS** 

ADU PROGRAM

CITY OF FRESNO PLANNING AND DEVELOPMENT DEPARTMENT 2600 FRESNO STREET, 3RD FLOOR

FRESNO, CA 93721 ARCHITECT: AARON NEUBERT ARCHITECTS, INC.

> 2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900

STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC. 600 WILSHIRE BOULEVARD, SUITE 760 LOS ANGELES, CALIFORNIA 90017

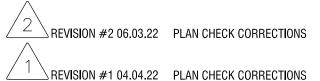
P. 213.627.6687

AARON NEUBERT CA# C-29005

MEP ENGINEER:

INNODEZ DESIGN AND ENGINEERING PLEASANTON, CALIFORNIA 94566









Project No. 2104 ADU PROGRAM CITY OF FRESNO CALIFORNIA

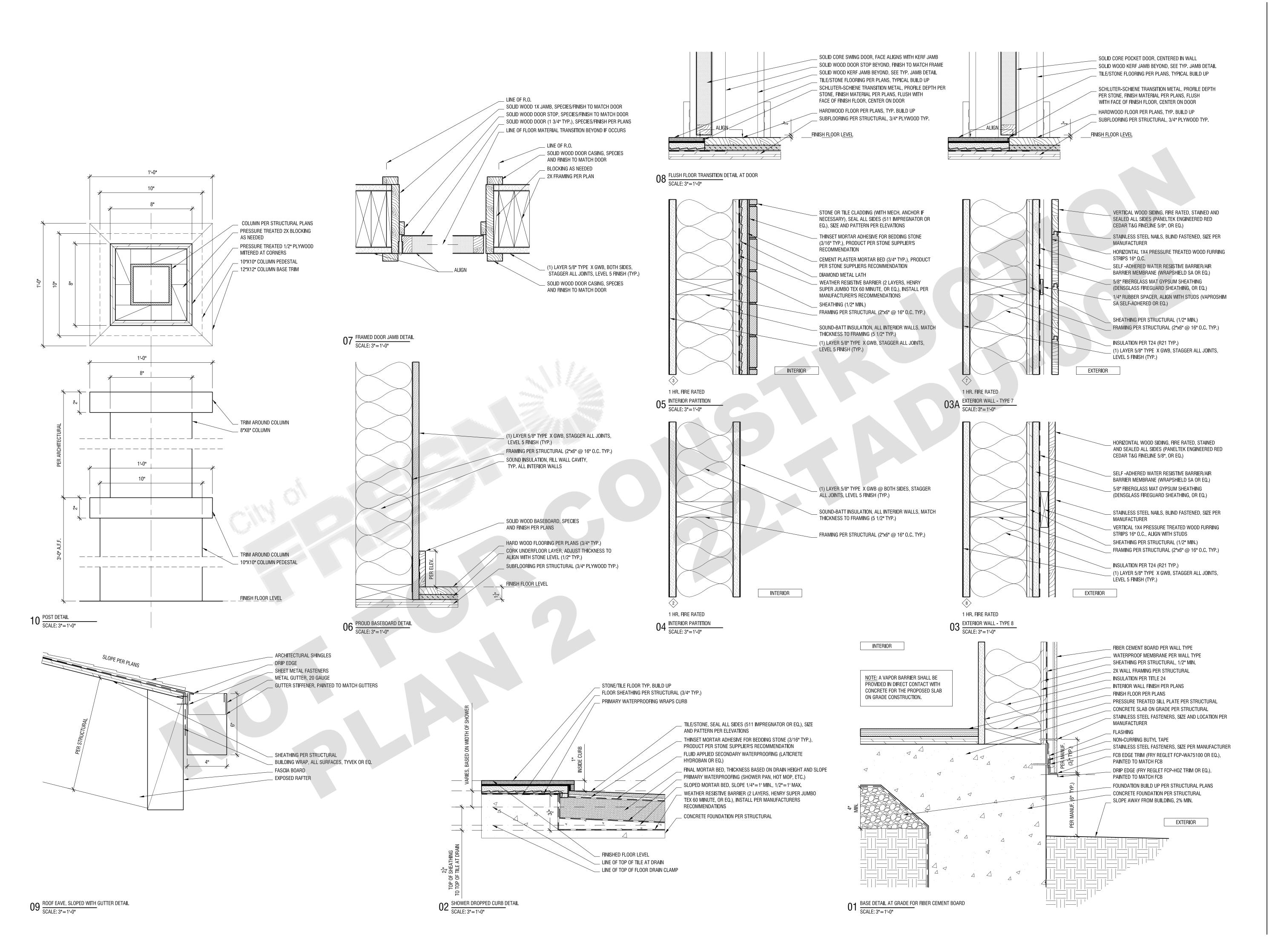
DRAWING TITLE:

DRAWN BY:

**GENERAL NOTES** 

DATE: JUNE 3, 2022

SCALE: AS NOTED





#### ADU PROGRAM

OWNER:

CITY OF FRESNO
PLANNING AND DEVELOPMENT DEPARTMENT
2600 FRESNO STREET, 3RD FLOOR

AARON NEUBERT CA# C-29005

LOS ANGELES, CALIFORNIA 90017

FRESNO, CA 93721

ARCHITECT<sup>.</sup>

AARON NEUBERT ARCHITECTS, INC. 2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900

STRUCTURAL ENGINEER:

P. 213.627.6687

NOUS ENGINEERING, INC. 600 WILSHIRE BOULEVARD, SUITE 760

MEP ENGINEER:

INNODEZ DESIGN AND ENGINEERING

IN

726 FOXBROUGH PLACE
PLEASANTON, CALIFORNIA 94566
P. 424.414.0997

REVISION: DATE:

2 DEMICION 40 00 00

REVISION #2 06.03.22 PLAN CHECK CORRECTIONS

REVISION #1 04.04.22 PLAN CHECK CORRECTIONS



Project No. 2104
ADU PROGRAM
CITY OF FRESNO
CALIFORNIA

DRAWING TITLE:

SEAL:

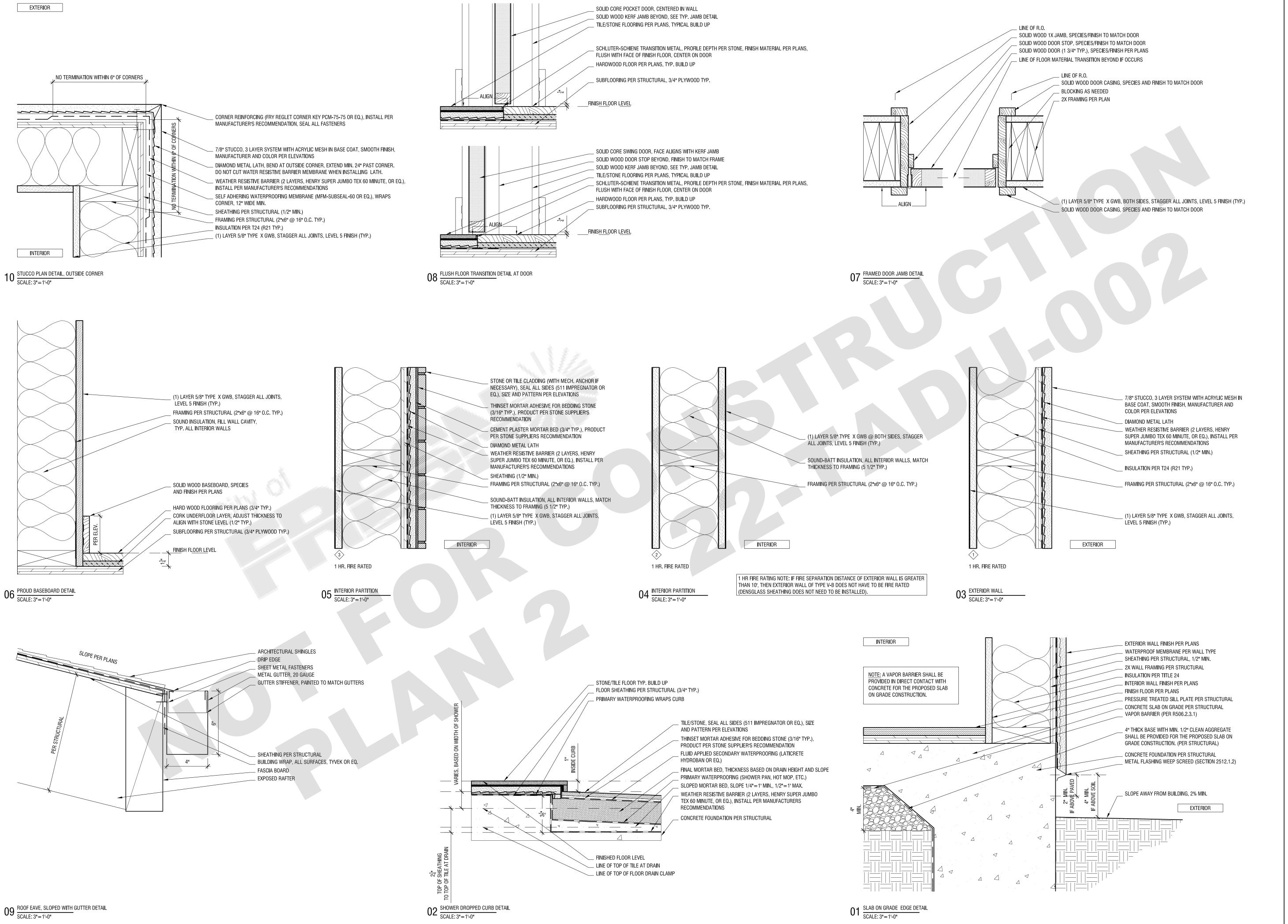
TYPICAL DETAIL CRAFTSMAN

date: JUNE 3, 2022

SCALE: 3"=1'-0"

DRAWN BY: ANX

A 020c





## ADU PROGRAM

OWNER:

CITY OF FRESNO
PLANNING AND DEVELOPMENT DEPARTMENT
2600 FRESNO STREET, 3RD FLOOR
FRESNO, CA 93721

AARON NEUBERT ARCHITECTS, INC. 2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039

LOS ANGELES, CALIFORNIA 90039
P. 323.953.4700 F. 323.953.4900

AARON NEUBERT CA# C-29005

STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC.
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LOS ANGELES, CALIFORNIA 90017 P. 213.627.6687

P FNGINFFR:

INNODEZ DESIGN AND ENGINEERING
726 FOXBROUGH PLACE
PLEASANTON, CALIFORNIA 94566
P. 424.414.0997

REVISION: DATE: COM

REVISION #2 06.03.22 PLAN CHECK CORRECTIONS

REVISION #1 04.04.22 PLAN CHECK CORRECTIONS



Project No. 2104
ADU PROGRAM
CITY OF FRESNO
CALIFORNIA

DRAWING TITLE:

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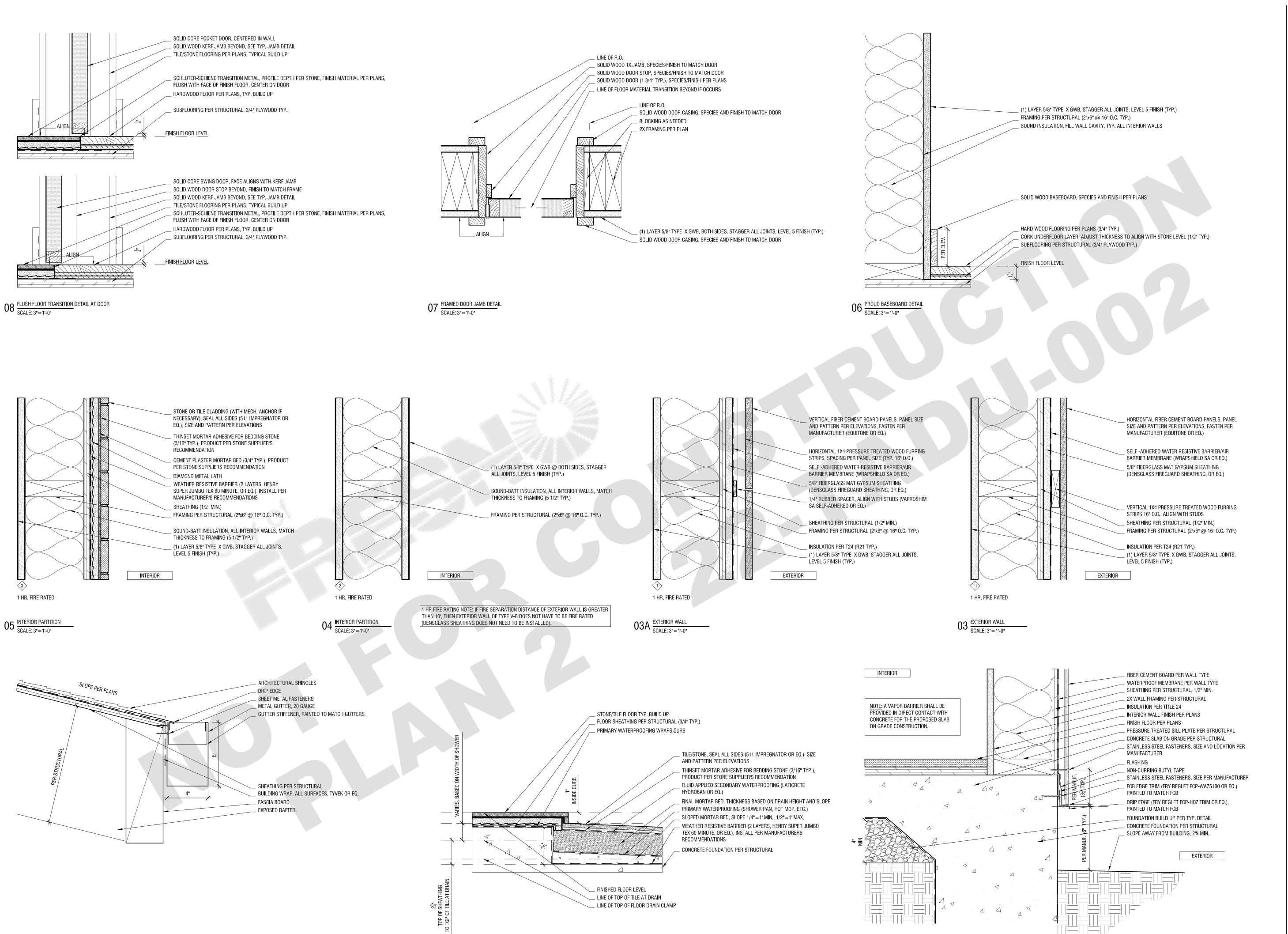
TYPICAL DETAIL GABLE

DATE: JUNE 3, 2022

SCALE: 3"=1'-0"

DRAWN BY: ANX

Aaron Neubert Architects, INC. 2022 A. O



01 BASE DETAIL AT GRADE FOR FIBER CEMENT BOARD SCALE: 3"=1'-0"

02 SHOWER DROPPED CURB DETAIL SCALE: 3"=1'-0"

09 ROOF EAVE, SLOPED WITH GUTTER DETAIL SCALE: 3"=1'-0"

ANX

#### AARON NEUBERT ARCHITECTS

### ADU PROGRAM

OWNER:

CITY OF FRESNO
PLANNING AND DEVELOPMENT DEPARTMENT
2600 FRESNO STREET, 3RD FLOOR

AARON NEUBERT ARCHITECTS, INC.

FRESNO, CA 93721

2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900

AARON NEUBERT CA# C-29005

OTUDAL ENGINEED

STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC.
600 WILSHIRE BOULEVARD, SUITE 760

LOS ANGELES, CALIFORNIA 90017

P. 213.627.6687

D ENOINEED.

INNODEZ DESIGN AND ENGINEERING
726 FOXBROUGH PLACE
PLEASANTON, CALIFORNIA 94566
P. 424.414.0997

REVISION: DATE: COMM

REVISION #2 06.03.22 PLAN CHECK CORRECTIONS

REVISION #1 04.04.22 PLAN CHECK CORRECTIONS

SEAL:



Project No. 2104
ADU PROGRAM
CITY OF FRESNO
CALIFORNIA

DRAWING TITLE:

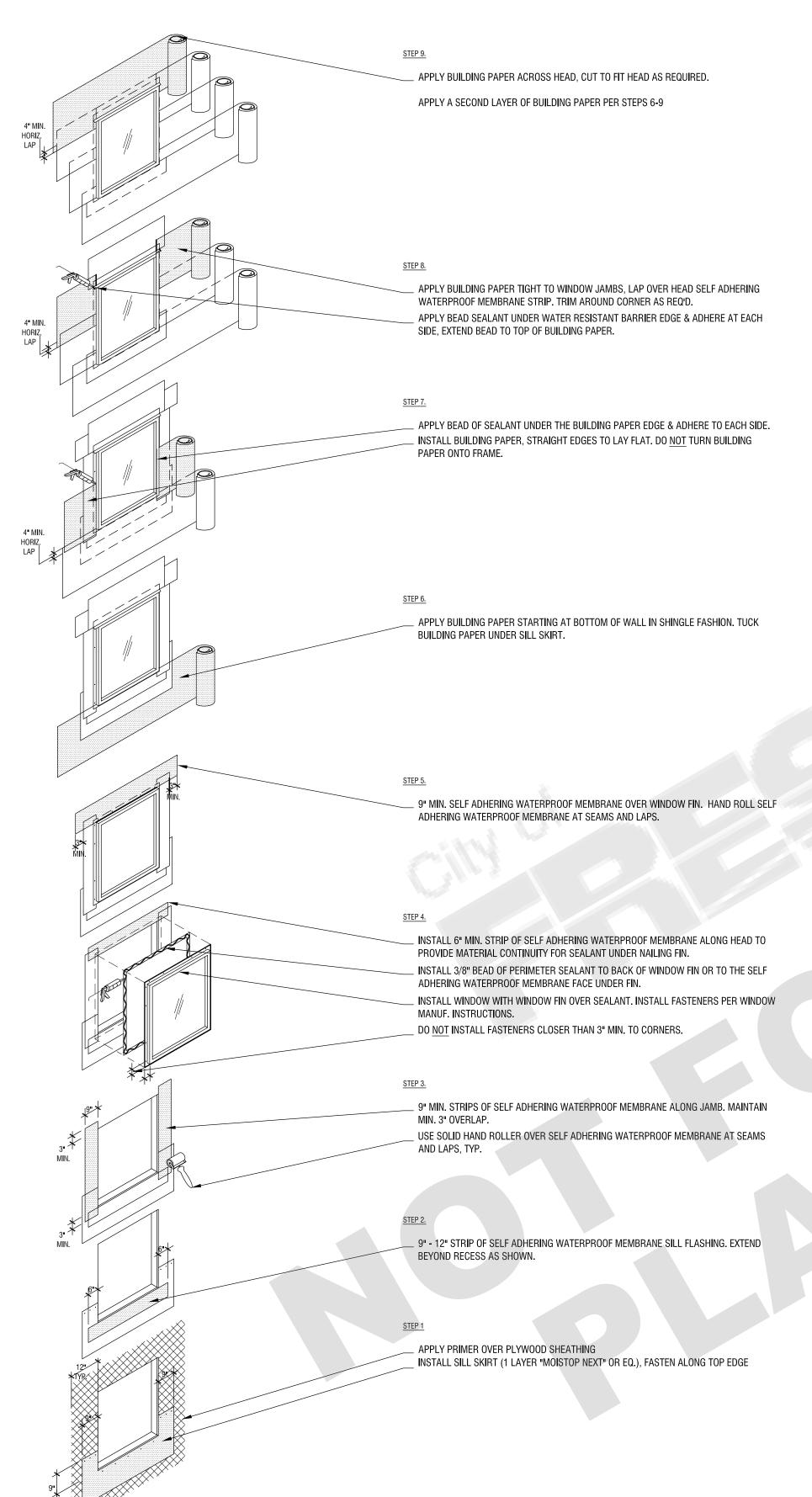
TYPICAL DETAIL CONTEMPORARY

DATE: JUNE 3, 2022

SCALE: 3"=1'-0"

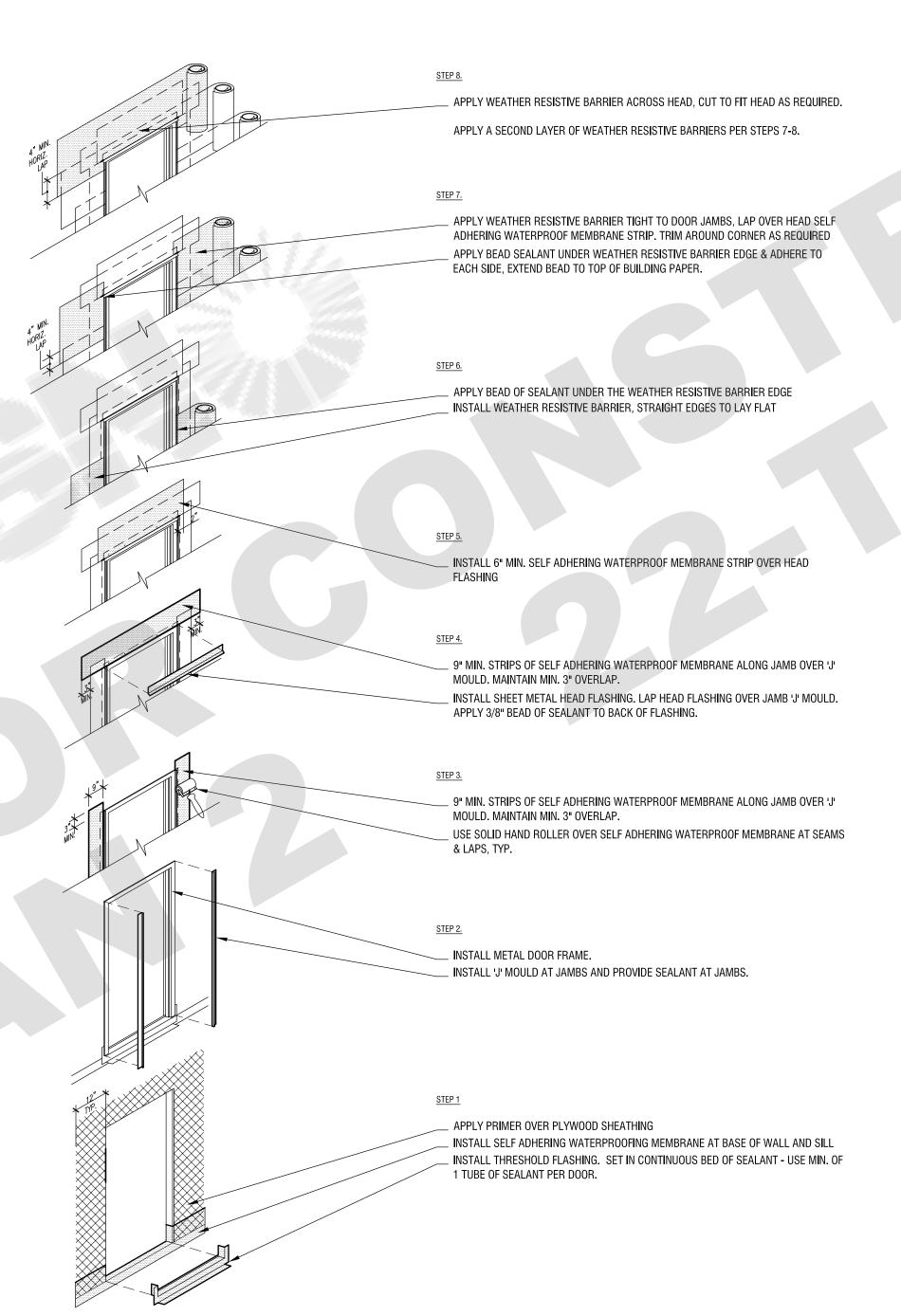
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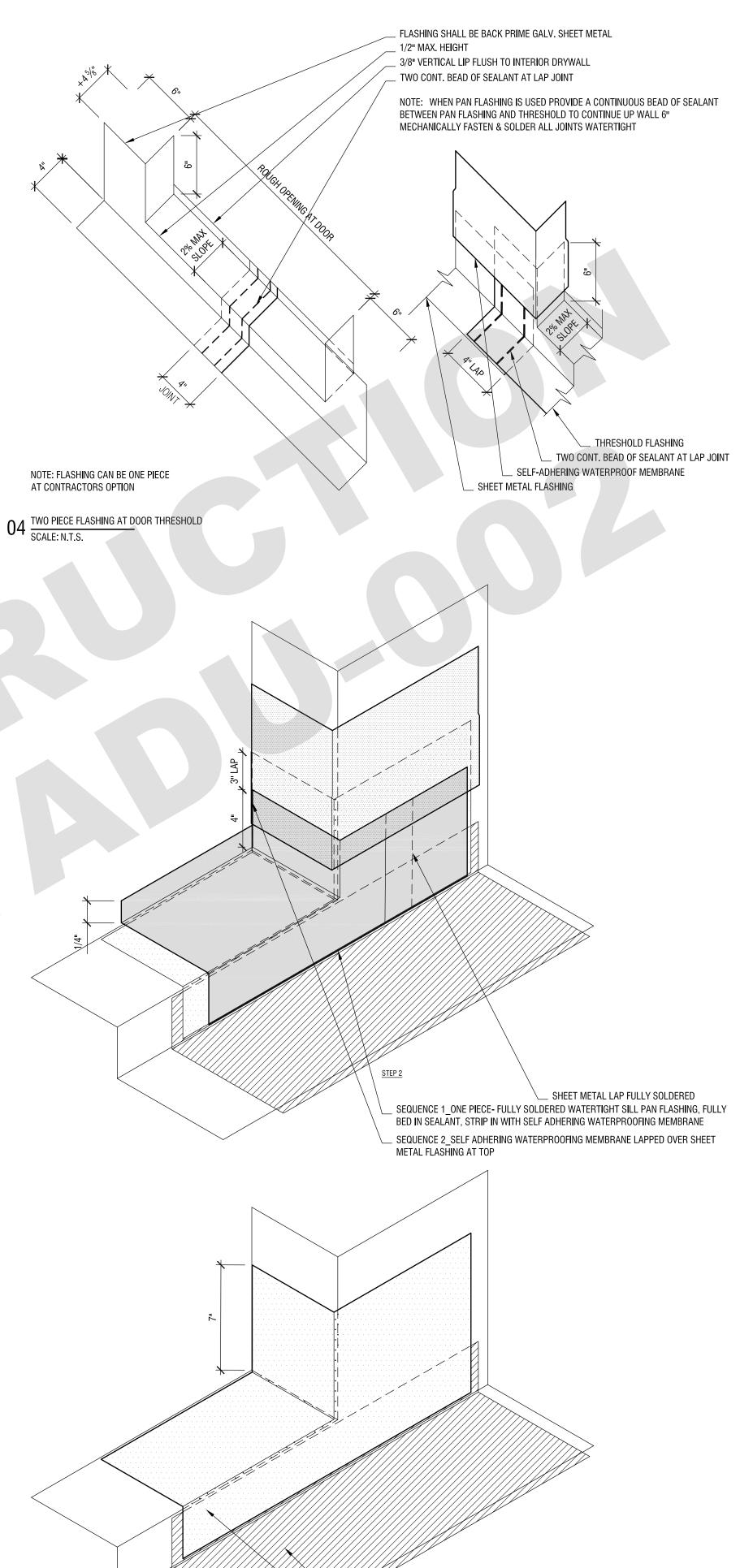
A. ... Number A albituate NO. 2000 A - 020S



03 FLUSH WINDOW FLASHING SEQUENCE SCALE: N.T.S.

FLASHING & PENETRATION NOTES THE FOLLOWING MATERIAL WILL BE USED ON ALL WALL PENETRATIONS. THE STEPS FOR APPLYING THE MATERIAL ARE FOR A GENERIC GUIDE. VERIFY THE RECOMMENDATIONS OF THE MATERIAL MANUFACTURE USED ON THE PROJECT AND WHERE THEY DIFFER FROM THE GENERIC DETAILS ON THE SHEET, FOLLOW THE MANUFACTURER'S RECOMMENDATIONS. 1. SELF ADHERING WATERPROOF MEMBRANE TO BE 25 MILS & SELF SEALING BY ONE OF THE FOLLOWING MANUFACTURER'S: A) FORTIFLASH 25 BY FORTIBER. B) VYCOR V25 SHIELD BY W.R. GRACE & CO. C) PREFORMED CORNER FLASHING TO BE TLS GS 100 BY TLS. BUILDING PAPER TO BE 2 LAYERS OF 60 MINUTE TYPE "D". A) SUPER JUMBO TEX-60 MINUTE BY FORTIFLASH. SHEATHING PRIMER-12" AROUND OPENING. A) WR GRACE PERM-A-BARRIER-WB PRIMER (USE W/ VYCOR). B) HENRY "AQUA-TAC PRIMER (USE WITH FORTIFLASH). C) 3M "99" SPRAY ADHESIVE. SEALANTS (VERIFY COMPATIBILITY WITH WINDOW & WATERPROOFING MANUFACTURE). B) FORTIFIBER "MOISTOP SEALANT" - (USE WITH FORTIFLASH). C) SCHNEE - MOREHEAD "PROINSTALL 7100" PROVIDE FIELD MOCK UP OF EACH PENETRATION TYPE FOR APPROVAL. PRE MADE CORNERS ARE ALLOWED.





\_ APPLY PRIMER OVER PLYWOOD SHEATHING \_ SEQUENCE 1\_HOT APPLIED RUBBERIZED ASPHALT

SEQUENCE 2 SELF ADHERING WATERPROOFING MEMBRANE

 $01 \frac{\text{SILL PAN FLASHING SEQUENCE}}{\text{SCALE: N.T.S.}}$ 



#### AARON NEUBERT ARCHITECTS

#### ADU PROGRAM

OWNER:

ARCHITECT:

CITY OF FRESNO
PLANNING AND DEVELOPMENT DEPARTMENT
2600 FRESNO STREET, 3RD FLOOR

FRESNO, CA 93721

AARON NEUBERT ARCHITECTS, INC.

2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900 AARON NEUBERT CA# C-29005

STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC. 600 WILSHIRE BOULEVARD, SUITE 760 LOS ANGELES, CALIFORNIA 90017 P. 213.627.6687

P ENGINEER:

INNODEZ DESIGN AND ENGINEERING
726 FOXBROUGH PLACE
PLEASANTON, CALIFORNIA 94566
P. 424.414.0997

REVISION: DATE: COM

REVISION #2 06.03.22 PLAN CHECK CORRECTIONS

REVISION #1 04.04.22 PLAN CHECK CORRECTIONS



Project No. 2104
ADU PROGRAM
CITY OF FRESNO
CALIFORNIA

DRAWING TITLE:

TYPICAL DETAIL FLASHING

DATE: JUNE 3, 2022

SCALE: N.T.S.

DRAWN BY: ANX

·· ANX

•• ANX

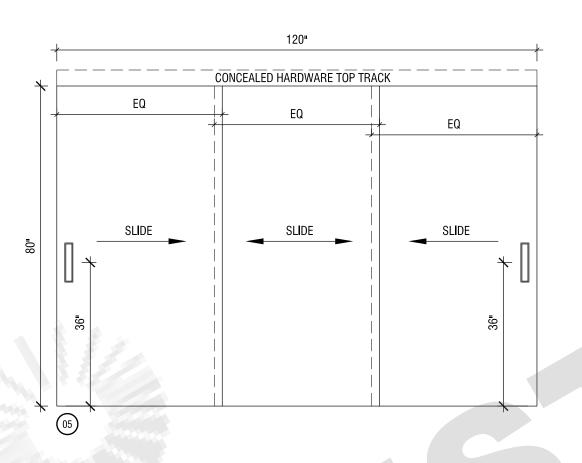
AC

02 DOOR FLASHING SCALE: N.T.S.

#### DOOR SCHEDULE

UNIT	QTY.	TYPE	LOCATION	O.D. WIDTH	O.D. HEIGHT	U-FACTOR	SHGC	GLASS	FINISH	HINGES	MANUFACTURER #	COMMENTS	HARDWARE GROUP
01	1	FIBERGLASS DOOR	ENTRY	36"	80"	-	-	-	-	SQ. STN. STL.		-	-
02	1	SOLID WOOD DOOR 1-3/4" FLUSH PANEL	BATH	34"	80"	-	-	-	-	SQ. STN. STL.	-	-	-
03	1	SOLID WOOD DOOR 1-3/4" FLUSH PANEL	BEDROOM	32"	80"	-	-	-	-	-	-	SLIDING POCKET DOOR	-
04	1	SOLID WOOD DOOR FLUSH PANEL BIFOLD	CLOSET	38"	80"	-	-	-	-	-	-	BIFOLD DOOR	-
05	1	SOLID WOOD DOOR 1-3/4" FLUSH PANEL	BEDROOM CLOSET	120"	80"	-	-	-	-	-	-	3 PANEL SLIDING CLOSET	-

ALL WINDOWS AND DOORS ARE VIEWED FROM EXTERIOR LOOKING AT THE WINDOWS AND DOORS



SCREEN

YES

YES

YES

VINYL

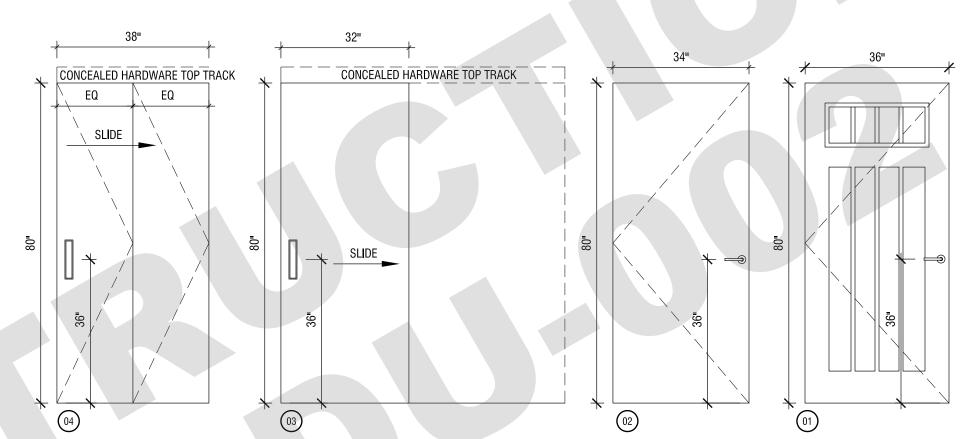
VINYL

VINYL

VINYL

VINYL YES

MODEL #



Door landing requirements:

HUMIDI-STAT

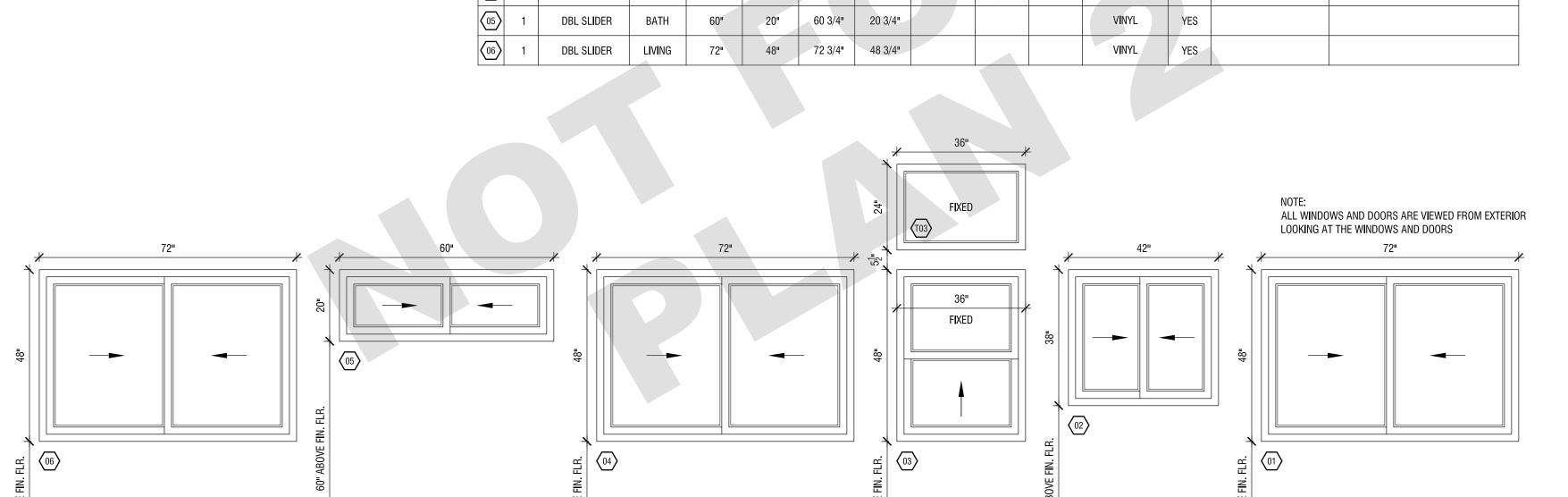
**ENERGY STAR** 

COMPLIANT

a)Width of door with 36" minimum. (CRC section R311.3) b)No more than 1½"lower than the top of the threshold. (CRC section R311.3.1) ALL GLASS TO BE CLEAR TEMPERED c)Not more than 7¾" below the top of the threshold provided that the door does not swing over the landing or floor. (CRC section R311.3.1) COMMENTS

PROVIDE WALL BACKING AT SHOWER \_ WALL FOR GRAB BAR OPTION

HVAC INDOOR UNIT IN DROP AREA \_



LOCATION O.D. WIDTH O.D. HEIGHT R.O. WIDTH R.O. HEIGHT GLASS U-FACTOR SHGC

72 3/4" 48 3/4"

42 3/4" 38 3/4"

36 3/4" 48 3/4"

36 3/4" 24 3/4"

48" 72 3/4" 48 3/4"

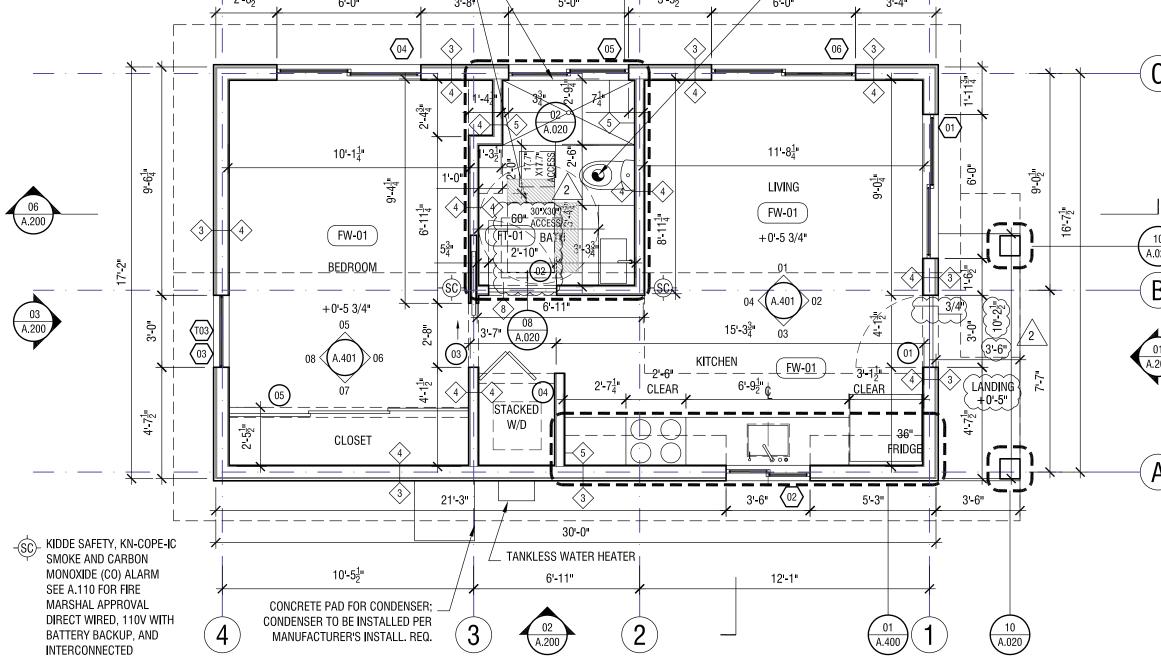
WINDOW SCHEDULE

DBL SLIDER

DBL SLIDER

SNGL HUNG BEDROOM

DBL SLIDER BEDROOM





#### AARON NEUBERT ARCHITECTS

## ADU PROGRAM

CITY OF FRESNO PLANNING AND DEVELOPMENT DEPARTMENT 2600 FRESNO STREET, 3RD FLOOR FRESNO, CA 93721

AARON NEUBERT ARCHITECTS, INC.

2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900

AARON NEUBERT CA# C-29005

STRUCTURAL ENGINEER: NOUS ENGINEERING, INC. 600 WILSHIRE BOULEVARD, SUITE 760

LOS ANGELES, CALIFORNIA 90017 P. 213.627.6687

INNODEZ DESIGN AND ENGINEERING 726 FOXBROUGH PLACE PLEASANTON, CALIFORNIA 94566 P. 424.414.0997

REVISION: DATE:

REVISION #2 06.03.22 PLAN CHECK CORRECTIONS

REVISION #1 04.04.22 PLAN CHECK CORRECTIONS



Project No. 2104 ADU PROGRAM CITY OF FRESNO CALIFORNIA

DRAWING TITLE:

ADU 02 - CRAFTSMAN FLOOR PLAN WINDOW/ DOOR SCHEDULE 514 SF

DATE: JUNE 3, 2022

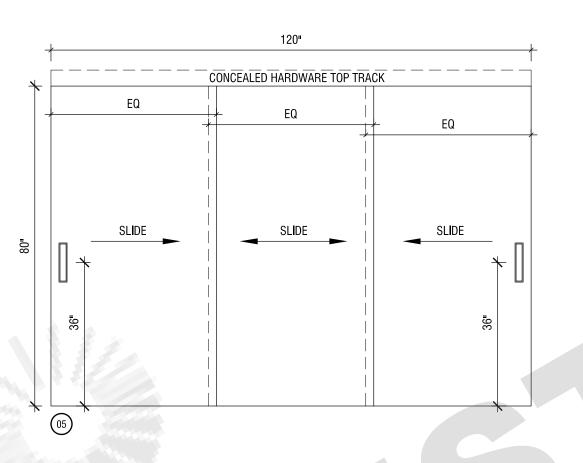
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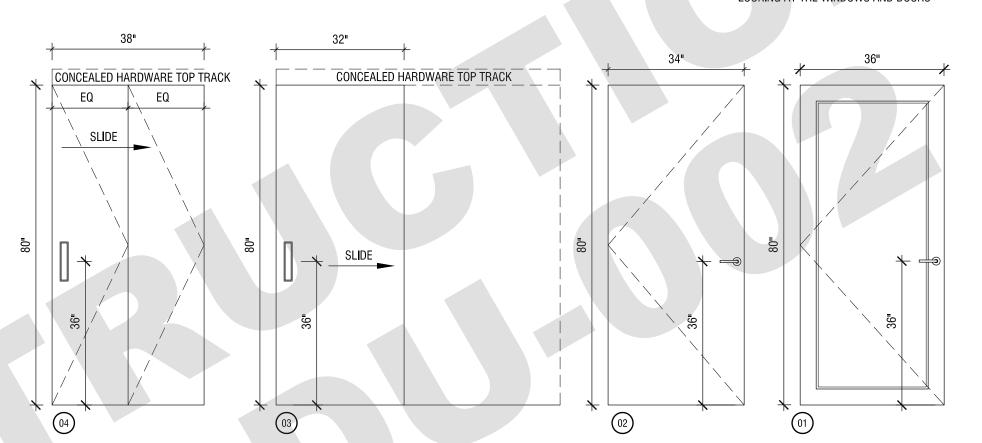
02 WINDOW SCHEDULE
SCALE: 1/2"=1'-0"

#### DOOR SCHEDULE

UNIT	QTY.	TYPE	LOCATION	O.D. WIDTH	O.D. HEIGHT	U-FACTOR	SHGC	GLASS	FINISH	HINGES	MANUFACTURER #	COMMENTS HARDWA GROUP	
01	1	FIBERGLASS DOOR WITH TEMP. LITE	ENTRY	36"	80"	-	-	-	-	SQ. STN. STL.	-		
02	1	SOLID WOOD DOOR 1-3/4" FLUSH PANEL	BATH	34"	80"	-	-	-	-	SQ. STN. STL.	-		
03	1	SOLID WOOD DOOR 1-3/4" FLUSH PANEL	BEDROOM	32"	80"	-	-	-	-	-	-	SLIDING POCKET DOOR -	
04	1	SOLID WOOD DOOR FLUSH PANEL BIFOLD	CLOSET	38"	80"	-	-	-	-	-	-	BIFOLD DOOR -	
05	1	SOLID WOOD DOOR 1-3/4" FLUSH PANEL	BEDROOM CLOSET	120"	80"	-	-	-	-	-	-	3 PANEL SLIDING CLOSET -	

PROVIDE WALL BACKING AT SHOWER \_ WALL FOR GRAB BAR OPTION NOTE:
ALL WINDOWS AND DOORS ARE VIEWED FROM EXTERIOR
LOOKING AT THE WINDOWS AND DOORS





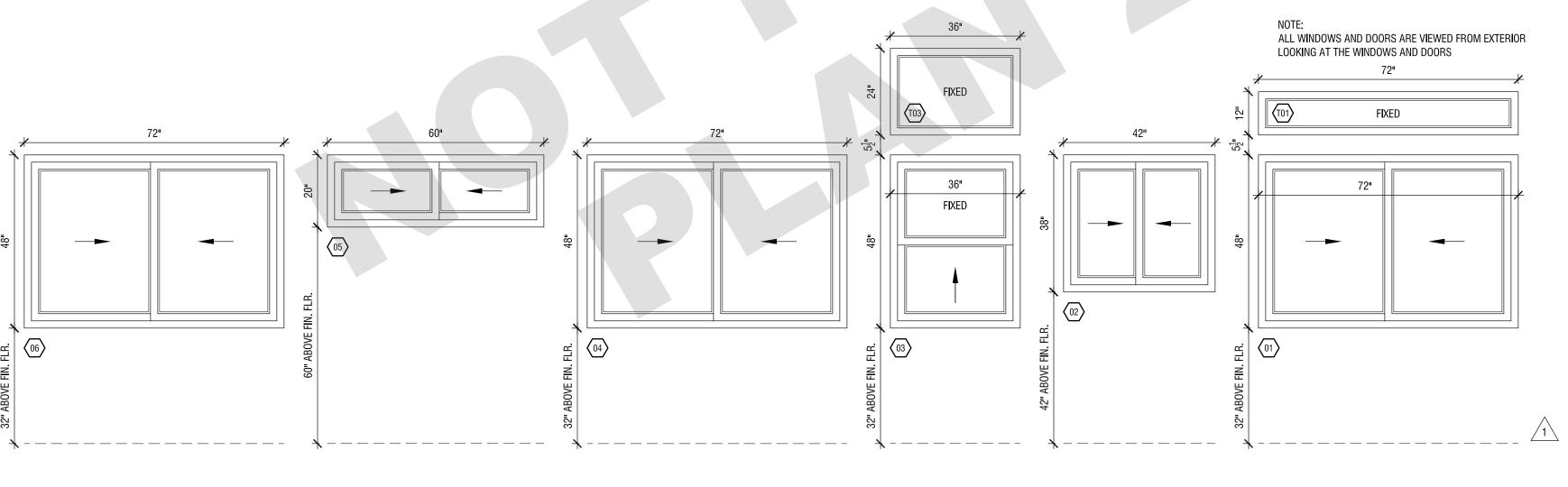
03 DOOR SCHEDULE

NOTE: ALL GLASS TO BE CLEAR TEMPERED LOCATION O.D. WIDTH O.D. HEIGHT R.O. WIDTH R.O. HEIGHT GLASS U-FACTOR SHGC SCREEN MODEL # COMMENTS VINYL 72 3/4" 48 3/4" YES 72 3/4" | 12 3/4" VINYL 12" 42 3/4" | 38 3/4" VINYL YES 36 3/4" 48 3/4" VINYL YES 24" 36 3/4" 24 3/4" VINYL 48" 72 3/4" 48 3/4" VINYL YES YES 60" 20" 60 3/4" 20 3/4" VINYL

VINYL YES

Door landing requirements:
a)Width of door with 36" minimum. (CRC section R311.3)
b)No more than 1½"lower than the top of the threshold. (CRC section R311.3.1)
c)Not more than 7¾" below the top of the threshold provided that the door does not swing over the landing or floor. (CRC section R311.3.1)

HUMIDI-STAT



72" 48" 72 3/4" 48 3/4"

WINDOW SCHEDULE

DBL SLIDER

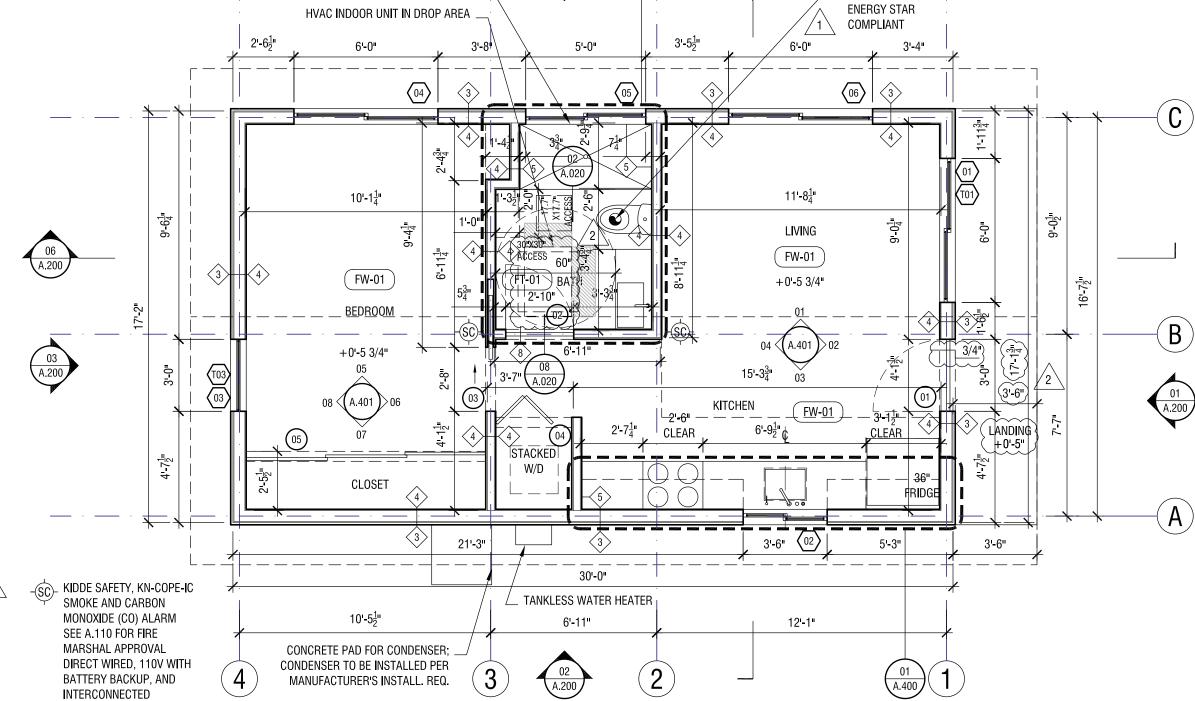
DBL SLIDER

DBL SL**I**DER

DBL SL**I**DER

SNGL HUNG BEDROOM

DBL SLIDER BEDROOM



AARON NEUBERT ARCHITECTS

#### ADU PROGRAM

OWNER:

CITY OF FRESNO
PLANNING AND DEVELOPMENT DEPARTMENT
2600 FRESNO STREET, 3RD FLOOR
FRESNO, CA 93721

AARON NEUBERT ARCHITECTS, INC.

2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900

AARON NEUBERT CA# C-29005

STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC.

LOS ANGELES, CALIFORNIA 90017 P. 213.627.6687

MEP ENGINEER:

INNODEZ DESIGN AND ENGINEERING
726 FOXBROUGH PLACE
PLEASANTON, CALIFORNIA 94566
P. 424.414.0997

REVISION: DATE: COMME

REVISION #2 06.03.22 PLAN CHECK CORRECTIONS

REVISION #1 04.04.22 PLAN CHECK CORRECTIONS



Project No. 2104
ADU PROGRAM
CITY OF FRESNO
CALIFORNIA

DRAWING TITLE:

ADU 02 - GABLE FLOOR PLAN WINDOW/ DOOR SCHEDULE 514 SF

DATE: JUNE 3, 2022
SCALE: AS NOTED

SCALE:

DRAWN BY:

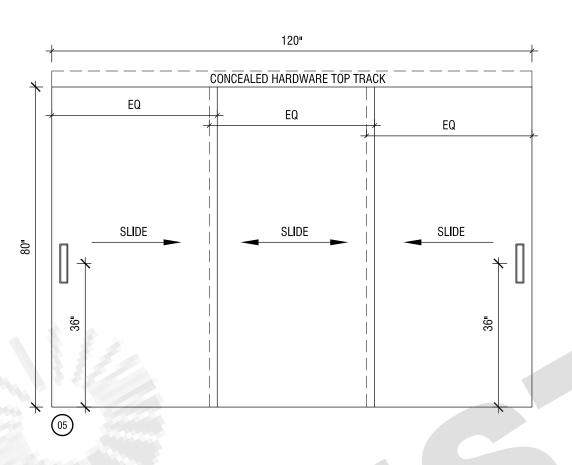
Aaron Neubert Architects, INC. 2022 A. 100g

02 WINDOW SCHEDULE
SCALE: 1/2"=1'-0"

#### DOOR SCHEDULE

UNIT	QTY.	TYPE	LOCATION	O.D. WIDTH	O.D. HEIGHT	U-FACTOR	SHGC	GLASS	FINISH	HINGES	MANUFACTURER #	COMMENTS	HARDWARE GROUP
01	1	FIBERGLASS DOOR WITH TEMP. LITE	ENTRY	36"	80"	-	-	-	-	SQ. STN. STL.	-	-	-
02	1	SOLID WOOD DOOR 1-3/4" FLUSH PANEL	BATH	34"	80"	-	-	-	-	SQ. STN. STL.	-	-	-
03	1	SOLID WOOD DOOR 1-3/4" FLUSH PANEL	BEDROOM	32"	80"	-	-	-	-	-	-	SLIDING POCKET DOOR	-
04	1	SOLID WOOD DOOR FLUSH PANEL BIFOLD	CLOSET	38"	80"	-	-	-	-	-	-	BIFOLD DOOR	
05	1	SOLID WOOD DOOR 1-3/4" FLUSH PANEL	BEDROOM CLOSET	120"	80"	-	-	-	-	-	-	3 PANEL SLIDING CLOSET	-

ALL WINDOWS AND DOORS ARE VIEWED FROM EXTERIOR LOOKING AT THE WINDOWS AND DOORS



WINDOW SCHEDULE

(06)

DBL SLIDER

DBL SLIDER

SNGL HUNG

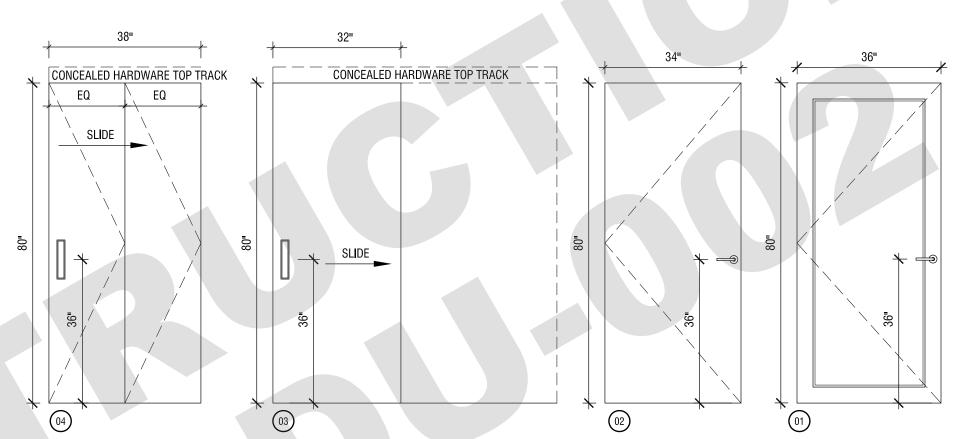
DBL SLIDER

DBL SLIDER

DBL SLIDER

72 3/4" 48 3/4"

72" 24" 72 3/4" 24 3/4"



a)Width of door with 36" minimum. (CRC section R311.3)

section R311.3.1)

section R311.3.1)

b)No more than 1½"lower than the top of the threshold. (CRC

c)Not more than 7¾" below the top of the threshold provided that the door does not swing over the landing or floor. (CRC

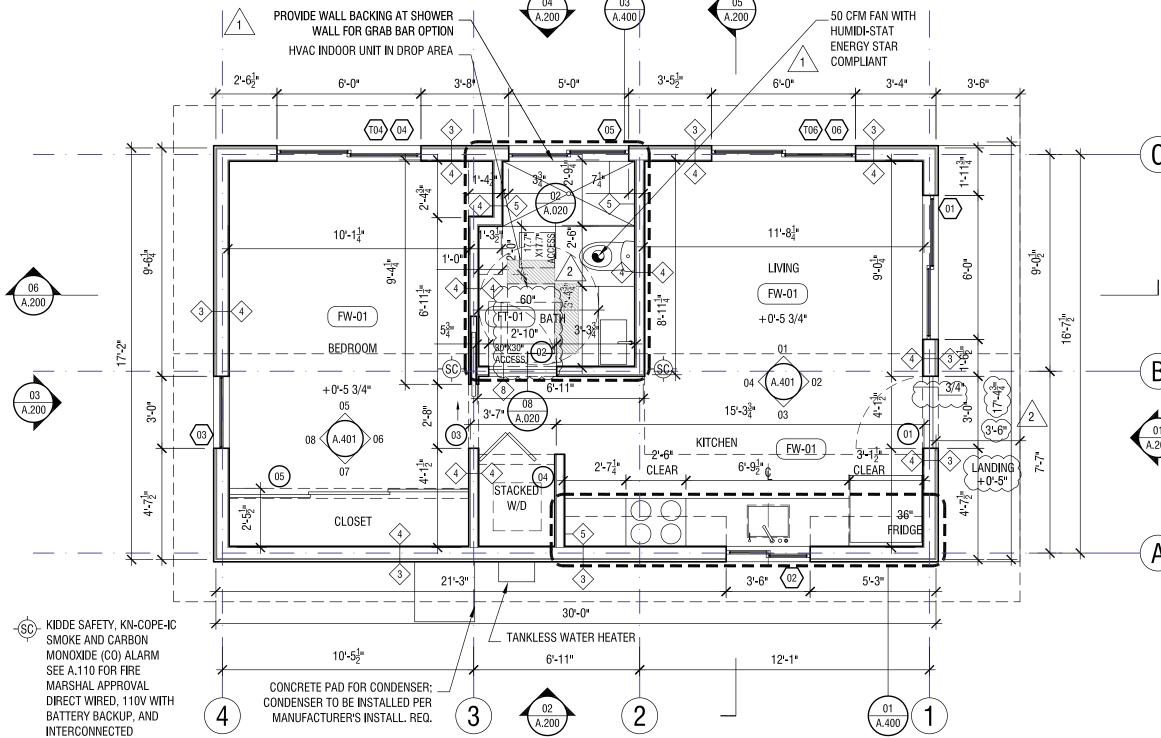
NOTE: ALL GLASS TO BE CLEAR TEMPERED LOCATION O.D. WIDTH O.D. HEIGHT R.O. WIDTH R.O. HEIGHT GLASS U-FACTOR SHGC MODEL # COMMENTS SCREEN VINYL 72 3/4" 48 3/4" YES 42 3/4" 38 3/4" VINYL VINYL YES 36 3/4" 48 3/4" 72 3/4" 48 3/4" VINYL YES 72 3/4" 24 3/4" VINYL PROVIDE WALL BACKING AT SHOWER \_ WALL FOR GRAB BAR OPTION 60 3/4" 20 3/4" VINYL YES

NOTE: ALL WINDOWS AND DOORS ARE VIEWED FROM EXTERIOR LOOKING AT THE WINDOWS AND DOORS

VINYL YES

**X----- X------ X------**

VINYL



AARON NEUBERT ARCHITECTS

#### ADU PROGRAM

CITY OF FRESNO PLANNING AND DEVELOPMENT DEPARTMENT 2600 FRESNO STREET, 3RD FLOOR FRESNO, CA 93721

AARON NEUBERT ARCHITECTS, INC.

2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900 AARON NEUBERT CA# C-29005

STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC. 600 WILSHIRE BOULEVARD, SUITE 760 LOS ANGELES, CALIFORNIA 90017 P. 213.627.6687

INNODEZ DESIGN AND ENGINEERING 726 FOXBROUGH PLACE PLEASANTON, CALIFORNIA 94566 P. 424.414.0997

REVISION: DATE:

REVISION #2 06.03.22 PLAN CHECK CORRECTIONS

REVISION #1 04.04.22 PLAN CHECK CORRECTIONS



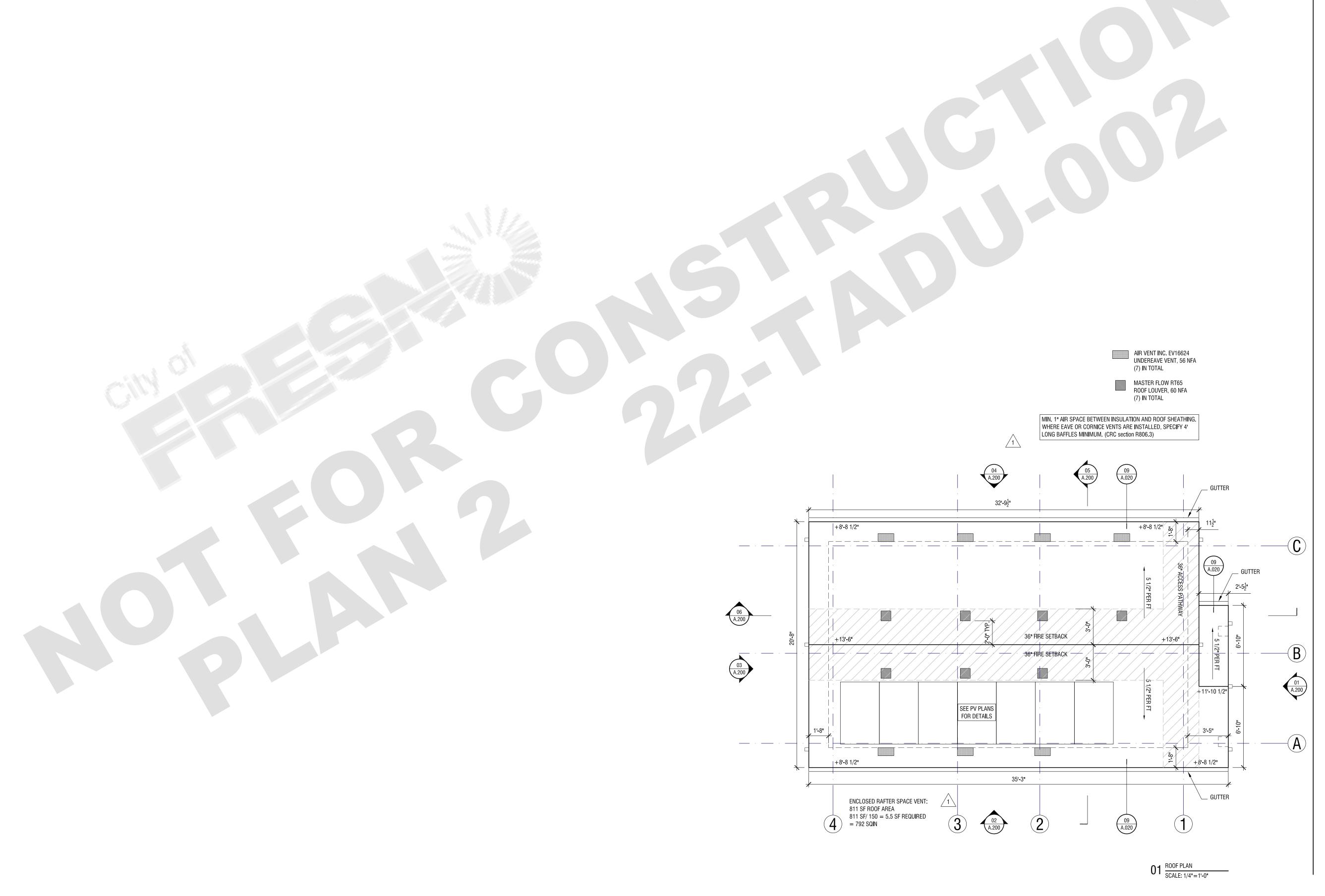
Project No. 2104 ADU PROGRAM CITY OF FRESNO CALIFORNIA

DRAWING TITLE: ADU 02 - CONTEMPORARY FLOOR PLAN WINDOW/ DOOR SCHEDULE 514 SF

DATE: JUNE 3, 2022

SCALE: AS NOTED DRAWN BY:

02 WINDOW SCHEDULE
SCALE: 1/2"=1'-0"





ADU PROGRAM

CITY OF FRESNO PLANNING AND DEVELOPMENT DEPARTMENT 2600 FRESNO STREET, 3RD FLOOR FRESNO, CA 93721

AARON NEUBERT ARCHITECTS, INC.

2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900 AARON NEUBERT CA# C-29005

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INNODEZ DESIGN AND ENGINEERING 726 FOXBROUGH PLACE PLEASANTON, CALIFORNIA 94566 P. 424.414.0997

REVISION: DATE:

REVISION #2 06.03.22 PLAN CHECK CORRECTIONS

REVISION #1 04.04.22 PLAN CHECK CORRECTIONS



Project No. 2104
ADU PROGRAM CITY OF FRESNO CALIFORNIA

DRAWING TITLE:

ADU 02 - CRAFTSMAN ROOF PLAN

DATE: JUNE 3, 2022 SCALE: 1/4=1'-0"

DRAWN BY:

STRUCTURAL ENGINEER: AIR VENT INC. EV16624 UNDEREAVE VENT, 56 NFA (7) IN TOTAL MASTER FLOW RT65 ROOF LOUVER, 60 NFA (7) IN TOTAL MIN. 1" AIR SPACE BETWEEN INSULATION AND ROOF SHEATHING. WHERE EAVE OR CORNICE VENTS ARE INSTALLED, SPECIFY 4' LONG BAFFLES MINIMUM. (CRC section R806.3) 35'-3" REVISION #1 04.04.22 PLAN CHECK CORRECTIONS +8'-8 1/2" +8'-8/1/2" 06 A.200 36" FIRE SETBACK 36" FIRE SETBACK 03 A,200 SEE PV PLANS FOR DETAILS \_\_ GUTTER ENCLOSED RAFTER SPACE VENT: 811 SF ROOF AREA 811 SF/ 150 = 5.5 SF REQUIRED = 792 SQIN DRAWN BY: 01 ROOF PLAN
SCALE: 1/4"=1'-0"



## ADU PROGRAM

CITY OF FRESNO PLANNING AND DEVELOPMENT DEPARTMENT 2600 FRESNO STREET, 3RD FLOOR FRESNO, CA 93721

AARON NEUBERT ARCHITECTS, INC. 2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900

AARON NEUBERT CA# C-29005

NOUS ENGINEERING, INC. 600 WILSHIRE BOULEVARD, SUITE 760 LOS ANGELES, CALIFORNIA 90017 P. 213.627.6687

INNODEZ DESIGN AND ENGINEERING 726 FOXBROUGH PLACE PLEASANTON, CALIFORNIA 94566 P. 424.414.0997

REVISION: DATE:

2 REVISION #2 06.03.22 PLAN CHECK CORRECTIONS



Project No. 2104
ADU PROGRAM
CITY OF FRESNO
CALIFORNIA

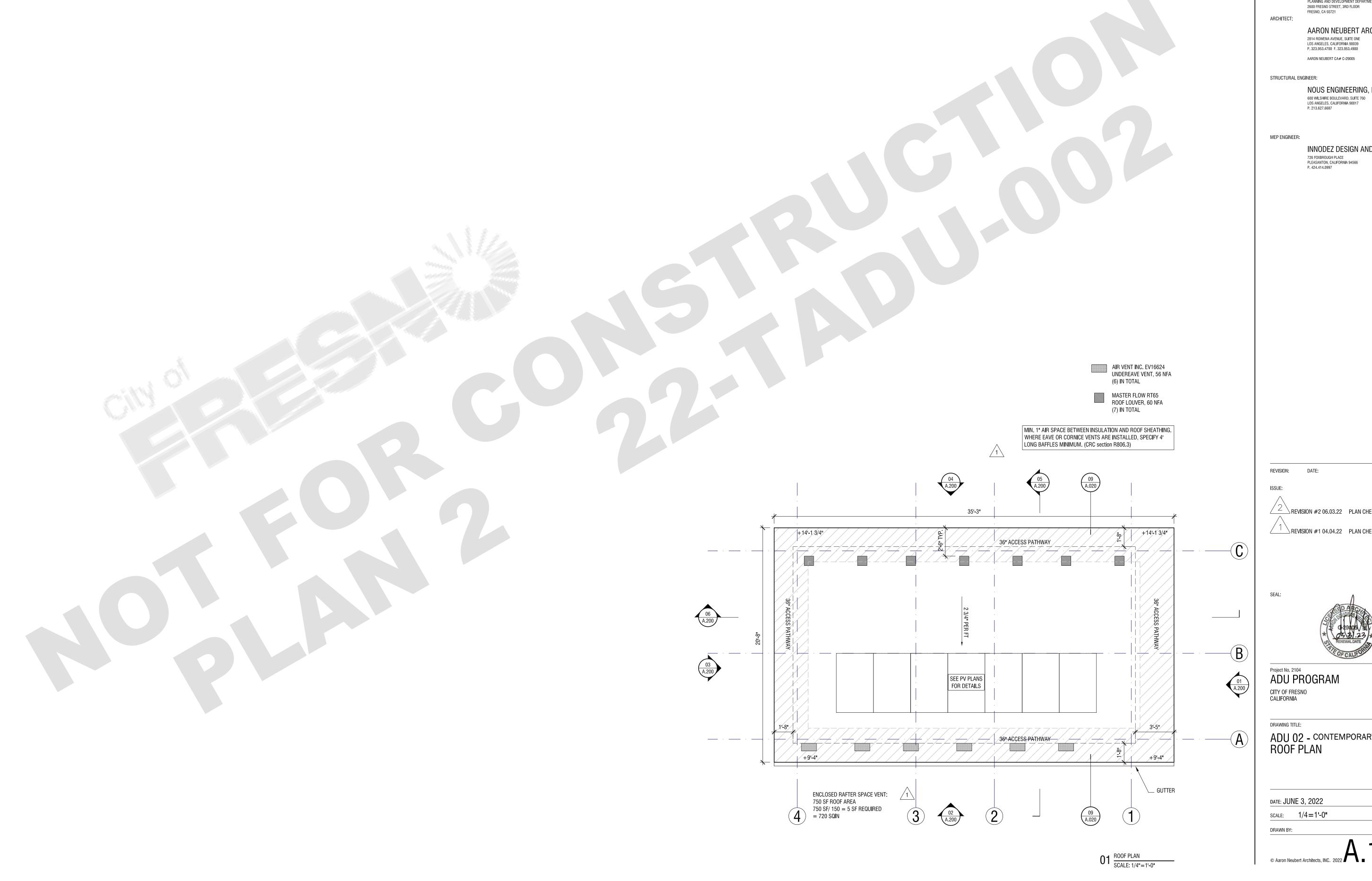
DRAWING TITLE:

ADU 02 - GABLE ROOF PLAN

DATE: JUNE 3, 2022

SCALE: 1/4=1'-0"

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CITY OF FRESNO
PLANNING AND DEVELOPMENT DEPARTMENT
2600 FRESNO STREET, 3RD FLOOR
FRESNO, CA 93721

ADU PROGRAM

AARON NEUBERT ARCHITECTS, INC. 2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900

AARON NEUBERT CA# C-29005

NOUS ENGINEERING, INC.

INNODEZ DESIGN AND ENGINEERING

2 REVISION #2 06.03.22 PLAN CHECK CORRECTIONS

REVISION #1 04.04.22 PLAN CHECK CORRECTIONS



ADU 02 - CONTEMPORARY ROOF PLAN

#### CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION OFFICE OF THE STATE FIRE MARSHAL FIRE ENGINEERING - BUILDING MATERIALS LISTING PROGRAM

#### LISTING SERVICE

7263-1610:0142 Page 1 of 1 LISTING No. CATEGORY: 7263 -- SMOKE ALARM-COMBINATION SMOKE/CARBON MONOXIDE (PHOTOELECTRIC)

LISTEE: KIDDE SAFETY4820 Centennial Blvd, Suite 145, Colorado Springs, CO 80919

> Contact: Larry Ratzlaff (847) 214-1190 Email: larry.ratzlaff@carrier.com

\*Model KN-COPE-IC is a 120 VAC powered with a 9 volt backup photoelectric type smoke

and electrochemical carbon monoxide (CO) alarm. \*Unit is equipped with alarm silence feature and have a 10 year end of life timer. Refer to listee's data sheet for detailed product

description and operational considerations.

RATING: Model KN-COPE-IC: 120 VAC with 9 volt backup

Approved batteries: Duracell MN1604 or MX1604, Energizer 522 or Gold Peak 1604A

INSTALLATION: In accordance with listee's printed installation instructions, applicable codes and ordinances and in a manner acceptable to the authority having jurisdiction.

Listee's name, model number, electrical rating, and UL label. MARKING:

> Listed as a single/multiple station photoelectric smoke and electrochemical carbon monoxide (CO) alarm.

APPROVAL:

1. The photoelectric type alarms are generally more effective at detecting slow, smoldering fires which smolder for hours before bursting into flame. Sources of these fires may include cigarettes burning in couches or bedding. The ionization type alarms are generally more effective at detecting fast, flaming fires which consume combustible materials rapidly and spread quickly. Sources of these fires may include paper burning in a waste container or a grease fire in the kitchen.

2. \*Meet the new smoke alarm requirement (SB1394).

3. \*Formerly 7257-1610:0142

\*Rev. 06-10-15 bh

This listing is based upon technical data submitted by the applicant. CSFM Fire Engineering staff has reviewed the test results and/or other data but does not make an independent verification of any claims. This listing is not an endorsement or recommendation of the item listed. This listing should not be used to verify correct operational requirements or installation criteria. Refer to listee's data sheet, installation instructions and/or other

July 01, 2021

Listing Expires June 30, 2022

Authorized By: DAVID CASTILLO,, M.E., F.P.E.

Fire Engineering Division

03 SMOKE/ CARBON MONOXIDE ALARM SPECIFICATION SCALE: N/A

#### FRESNO ADU

GENERAL NOTES:

1. Luminaires shall have appropriate UL or other label as required by local codes. 2. Luminaires shall include accessories for installation according to local and national codes.

3. Contractor shall verify the following prior to ordering luminaires:

a. locations and recess depths and any structural and other conflicts. b. final voltages and ceiling trim compatibility.

c. ceilings more than 3/43/4" thick which limits trim compatibility.

d. luminaires in insulated ceilings, necessitating the need for insulated ceiling type housings. 4. Contractor shall provide approved fire-rated enclosures for luminaires located in a fire-rated ceiling.

5. Responsibility for emergency lighting, code compliance, and circuiting to meet code conformance remains

with the Architect and Electrical Engineer as required by law.

6. Contractor shall submit luminaire substitutions prior to bid for review. Contractor shall supply a sample and/or photometric data if requested. If substitution is rejected, Contractor shall provide specified product.

7. Luminaire voltages to be determined by Project Electrical Engineer.

8. All luminaire sockets shall be labeled permanently, in the factory, with wattages indicated in "Lamp Specification" column, not maximum wattages.

TYPE	DESCRIPTION	LUMINAIRE SPECIFICATION	LAMP SPECIFICATION	INPUT WATTS	LUMINAIRE NOTES	LOCATION	REV. NO.
F1	Downlight Interior	ELCO EL490ICA housing Koto Module with Pex 4" Adjustable Phenolic Baffle	2700K 120V	14 W	White Trim	Typ. Interior	
F2	Surface mounted luminaire for sink/ vanity Damp Location	DWELED Slim Nightstick LED Wall Light WS-35819	1276 lm 3000K 120V	17 W		Bathroom	
F3	Under cabinet mounted led luminaire	Commercial Electric  16 ft. White Indoor LED Tape Light with remote 1004 105 594	180 lm/ft 3000K Dimmable 12V	4.7 W/ft		Under Cabinet	
F4	Ceiling mounted fan w/ light fixture	Home Decorators Collection  Mercer 52in. LED Indoor Brushed Nickel Ceiling Fan with Light Kit and Remote	120V	14 W		Bedroom	
F5	Surface mounted luminaire for entryway Exterior	Artika Glacier 1-Light LED Wall Sconce	650 lm 3000K Dimmable 120V	9.3 W		Exterior Entry	

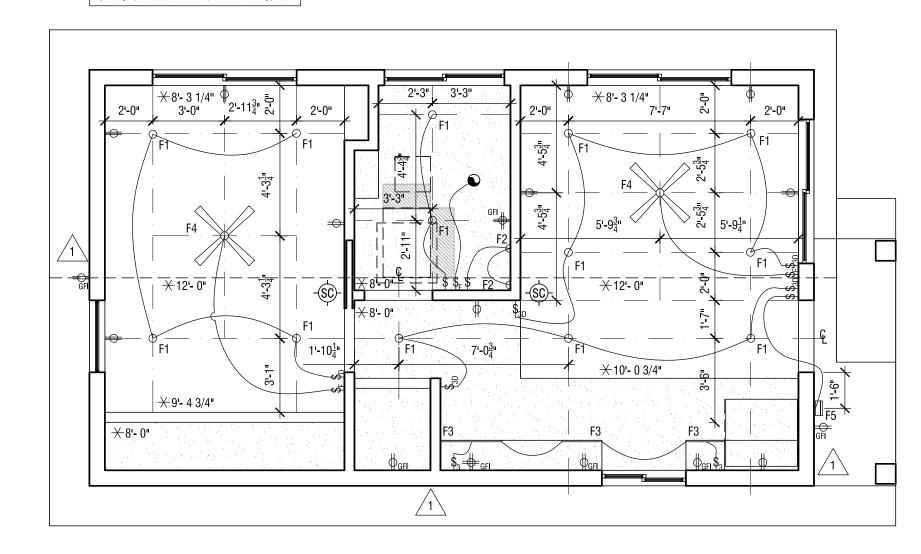
02 LIGHTING SCHEDULE SCALE: N/A

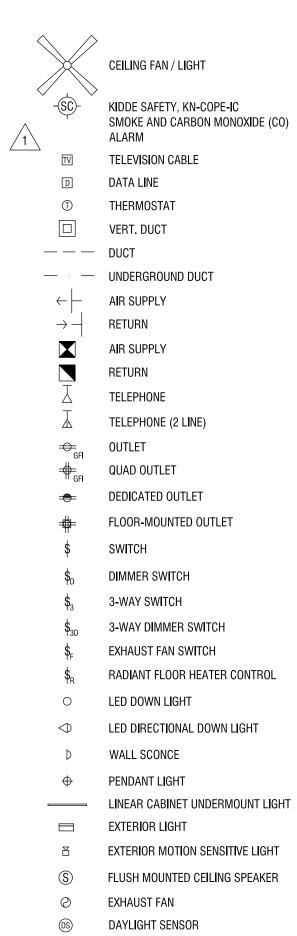


mechanical equipment. (CEC section 210.63)

NOTE: Receptacles serving countertops and Work Surfaces: a) Receptacle outlets shall not be installed in a face up position in the work surfaces. b) Receptacle outlets shall be located on or above, but not more than 20in. above the countertop or work surface. (CEC section 210.52(C)(5)) c) Receptacle outlets shall be permitted to be mounted not more than 12in. below the countertop or work surface provided the countertop does not extend more than 6 in. beyond its support base. (CEC section 210.52(C)(5) Exception) d) On island and peninsular countertops, receptacles may be mounted a maximum 12in. below countertop provided there are no back splashes or dividers and no means to mount within 20in. above countertop, such as an overhead cabinet. (CEC section 210.52(C)(5)

NOTE: EXTERIOR ELECTRICAL RECEPTACLE TO BE INSTALLED AT 1'-6" A.F.F. TYPICAL





NOTE: ALL SWITCHES & OUTLETS TO HAVE

NOTE: EXTERIOR ELECTRICAL RECEPTACLE

VAULTED CEILING

TO HAVE WEATHERPROOF COVER

DROP CEILING

SCREWLESS FACEPLATES



ADU PROGRAM

CITY OF FRESNO PLANNING AND DEVELOPMENT DEPARTMENT 2600 FRESNO STREET, 3RD FLOOR FRESNO, CA 93721

AARON NEUBERT ARCHITECTS, INC.

2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900 AARON NEUBERT CA# C-29005

STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC. 600 WILSHIRE BOULEVARD, SUITE 760 LOS ANGELES, CALIFORNIA 90017 P. 213.627.6687

MEP ENGINEER:

INNODEZ DESIGN AND ENGINEERING 726 FOXBROUGH PLACE PLEASANTON, CALIFORNIA 94566 P. 424.414.0997

REVISION: DATE:

/ REVISION #2 06.03.22 PLAN CHECK CORRECTIONS

REVISION #1 04.04.22 PLAN CHECK CORRECTIONS



Project No. 2104 ADU PROGRAM CITY OF FRESNO CALIFORNIA

DRAWING TITLE:

ADU 02 - CRAFTSMAN REFLECTED CEILING PLAN LIGHTING SCHEDULE

DATE: JUNE 3, 2022

SCALE: AS NOTED

DRAWN BY:

#### CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION OFFICE OF THE STATE FIRE MARSHAL FIRE ENGINEERING - BUILDING MATERIALS LISTING PROGRAM

#### LISTING SERVICE

7263-1610:0142 Page 1 of 1 LISTING No. CATEGORY: 7263 -- SMOKE ALARM-COMBINATION SMOKE/CARBON MONOXIDE (PHOTOELECTRIC)

LISTEE: KIDDE SAFETY4820 Centennial Blvd, Suite 145, Colorado Springs, CO 80919

> Contact: Larry Ratzlaff (847) 214-1190 Email: larry.ratzlaff@carrier.com

\*Model KN-COPE-IC is a 120 VAC powered with a 9 volt backup photoelectric type smoke and electrochemical carbon monoxide (CO) alarm. \*Unit is equipped with alarm silence

feature and have a 10 year end of life timer. Refer to listee's data sheet for detailed product

description and operational considerations.

RATING: Model KN-COPE-IC: 120 VAC with 9 volt backup

Approved batteries: Duracell MN1604 or MX1604, Energizer 522 or Gold Peak 1604A

INSTALLATION: In accordance with listee's printed installation instructions, applicable codes and ordinances and in a manner acceptable to the authority having jurisdiction.

Listee's name, model number, electrical rating, and UL label. MARKING:

APPROVAL: Listed as a single/multiple station photoelectric smoke and electrochemical carbon

monoxide (CO) alarm.

1. The photoelectric type alarms are generally more effective at detecting slow, smoldering fires which smolder for hours before bursting into flame. Sources of these fires may include cigarettes burning in couches or bedding. The ionization type alarms are generally more effective at detecting fast, flaming fires which consume combustible materials rapidly and spread quickly. Sources of these fires may include paper burning in a waste container or a grease fire in the kitchen.

2. \*Meet the new smoke alarm requirement (SB1394).

3. \*Formerly 7257-1610:0142

\*Rev. 06-10-15 bh

This listing is based upon technical data submitted by the applicant. CSFM Fire Engineering staff has reviewed the test results and/or other data but does not make an independent verification of any claims. This listing is not an endorsement or recommendation of the item listed. This listing should not be used to verify correct operational requirements or installation criteria. Refer to listee's data sheet, installation instructions and/or other

July 01, 2021

Listing Expires June 30, 2022

Authorized By: DAVID CASTILLO,, M.E., F.P.E.

Fire Engineering Division

03 SMOKE/ CARBON MONOXIDE ALARM SPECIFICATION SCALE: N/A

#### FRESNO ADU

**GENERAL NOTES:** 

1. Luminaires shall have appropriate UL or other label as required by local codes. 2. Luminaires shall include accessories for installation according to local and national codes.

3. Contractor shall verify the following prior to ordering luminaires:

a. locations and recess depths and any structural and other conflicts.

b. final voltages and ceiling trim compatibility.

c. ceilings more than 3/43/4" thick which limits trim compatibility. d. luminaires in insulated ceilings, necessitating the need for insulated ceiling type housings.

4. Contractor shall provide approved fire-rated enclosures for luminaires located in a fire-rated ceiling. 5. Responsibility for emergency lighting, code compliance, and circuiting to meet code conformance remains

with the Architect and Electrical Engineer as required by law.

6. Contractor shall submit luminaire substitutions prior to bid for review. Contractor shall supply a sample and/or photometric data if requested. If substitution is rejected, Contractor shall provide specified product.

7. Luminaire voltages to be determined by Project Electrical Engineer.

8. All luminaire sockets shall be labeled permanently, in the factory, with wattages indicated in "Lamp

Specification	on" column, not maximum w	vattages.					
TYPE	DESCRIPTION	LUMINAIRE SPECIFICATION	LAMP SPECIFICATION	INPUT WATTS	LUMINAIRE NOTES	LOCATION	REV. NO
F1	Downlight Interior	ELCO EL490ICA housing  Koto Module with Pex 4" Adjustable Phenolic Baffle	2700K 120V	14 W	White Trim	Typ. Interior	
F2	Surface mounted luminaire for sink/ vanity Damp Location	DWELED Slim Nightstick LED Wall Light WS-35819	1276 lm 3000K 120V	17 W		Bathroom	
F3	Under cabinet mounted led luminaire	Commercial Electric  16 ft. White Indoor LED Tape Light with remote 1004 105 594	180 lm/ft 3000K Dimmable 12V	4.7 W/ft		Under Cabinet	
F4	Ceiling mounted fan w/ light fixture	Home Decorators Collection  Mercer 52in. LED Indoor Brushed Nickel Ceiling Fan with Light Kit and Remote	120V	14 W		Bedroom	
F5	Surface mounted luminaire for entryway Exterior	Artika Glacier 1-Light LED Wall Sconce	650 lm 3000K Dimmable 120V	9.3 W		Exterior Entry	

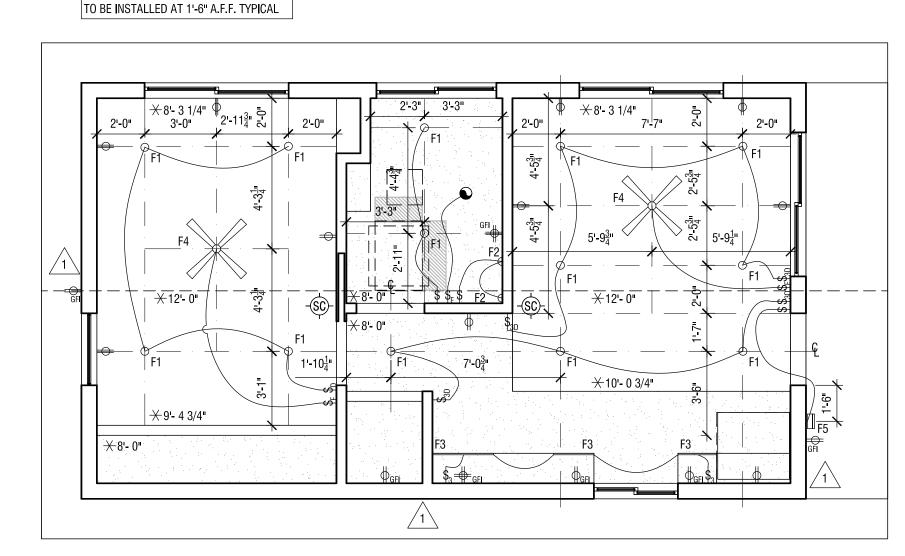
02 LIGHTING SCHEDULE SCALE: N/A



mechanical equipment. (CEC section 210.63)

NOTE: Receptacles serving countertops and Work Surfaces: a) Receptacle outlets shall not be installed in a face up position in the work surfaces. b) Receptacle outlets shall be located on or above, but not more than 20in. above the countertop or work surface. (CEC section 210.52(C)(5)) c) Receptacle outlets shall be permitted to be mounted not more than 12in. below the countertop or work surface provided the countertop does not extend more than 6 in. beyond its support base. (CEC section 210.52(C)(5) Exception) d) On island and peninsular countertops, receptacles may be mounted a maximum 12in. below countertop provided there are no back splashes or dividers and no means to mount within 20in. above countertop, such as an overhead cabinet. (CEC section 210.52(C)(5)

NOTE: EXTERIOR ELECTRICAL RECEPTACLE





EXHAUST FAN DAYLIGHT SENSOR

SCREWLESS FACEPLATES

NOTE: ALL SWITCHES & OUTLETS TO HAVE

NOTE: EXTERIOR ELECTRICAL RECEPTACLE TO HAVE WEATHERPROOF COVER

DROP CEILING

VAULTED CEILING



ADU PROGRAM

CITY OF FRESNO PLANNING AND DEVELOPMENT DEPARTMENT 2600 FRESNO STREET, 3RD FLOOR FRESNO, CA 93721

AARON NEUBERT ARCHITECTS, INC.

2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900 AARON NEUBERT CA# C-29005

#### STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC. 600 WILSHIRE BOULEVARD, SUITE 760 LOS ANGELES, CALIFORNIA 90017 P. 213.627.6687

#### MEP ENGINEER:

INNODEZ DESIGN AND ENGINEERING 726 FOXBROUGH PLACE PLEASANTON, CALIFORNIA 94566 P. 424.414.0997

REVISION: DATE:

 $\stackrel{\checkmark}{\sim}$  REVISION #2 06.03.22 PLAN CHECK CORRECTIONS REVISION #1 04.04.22 PLAN CHECK CORRECTIONS





#### Project No. 2104 ADU PROGRAM CITY OF FRESNO CALIFORNIA

DRAWING TITLE:

ADU 02 - GABLE REFLECTED CEILING PLAN LIGHTING SCHEDULE

#### DATE: JUNE 3, 2022

SCALE: AS NOTED

DRAWN BY:

#### CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION OFFICE OF THE STATE FIRE MARSHAL FIRE ENGINEERING - BUILDING MATERIALS LISTING PROGRAM

#### LISTING SERVICE

7263-1610:0142 Page 1 of 1 LISTING No. CATEGORY: 7263 -- SMOKE ALARM-COMBINATION SMOKE/CARBON MONOXIDE (PHOTOELECTRIC)

LISTEE: KIDDE SAFETY4820 Centennial Blvd, Suite 145, Colorado Springs, CO 80919

> Contact: Larry Ratzlaff (847) 214-1190 Email: larry.ratzlaff@carrier.com

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feature and have a 10 year end of life timer. Refer to listee's data sheet for detailed product

description and operational considerations.

RATING: Model KN-COPE-IC: 120 VAC with 9 volt backup

Approved batteries: Duracell MN1604 or MX1604, Energizer 522 or Gold Peak 1604A

INSTALLATION: In accordance with listee's printed installation instructions, applicable codes and ordinances and in a manner acceptable to the authority having jurisdiction.

Listee's name, model number, electrical rating, and UL label. MARKING:

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APPROVAL:

1. The photoelectric type alarms are generally more effective at detecting slow, smoldering fires which smolder for hours before bursting into flame. Sources of these fires may include cigarettes burning in couches or bedding. The ionization type alarms are generally more effective at detecting fast, flaming fires which consume combustible materials rapidly and spread quickly. Sources of these fires may include paper burning in a waste container or a grease fire in the kitchen.

2. \*Meet the new smoke alarm requirement (SB1394).

3. \*Formerly 7257-1610:0142

\*Rev. 06-10-15 bh

This listing is based upon technical data submitted by the applicant. CSFM Fire Engineering staff has reviewed the test results and/or other data but does not make an independent verification of any claims. This listing is not an endorsement or recommendation of the item listed. This listing should not be used to verify correct operational requirements or installation criteria. Refer to listee's data sheet, installation instructions and/or other

July 01, 2021

Listing Expires June 30, 2022

Authorized By: DAVID CASTILLO,, M.E., F.P.E.

Fire Engineering Division

03 SMOKE/ CARBON MONOXIDE ALARM SPECIFICATION SCALE: N/A

#### FRESNO ADU

GENERAL NOTES:

1. Luminaires shall have appropriate UL or other label as required by local codes. 2. Luminaires shall include accessories for installation according to local and national codes.

3. Contractor shall verify the following prior to ordering luminaires:

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c. ceilings more than 3/43/4" thick which limits trim compatibility.

d. luminaires in insulated ceilings, necessitating the need for insulated ceiling type housings. 4. Contractor shall provide approved fire-rated enclosures for luminaires located in a fire-rated ceiling.

5. Responsibility for emergency lighting, code compliance, and circuiting to meet code conformance remains

with the Architect and Electrical Engineer as required by law. 6. Contractor shall submit luminaire substitutions prior to bid for review. Contractor shall supply a sample

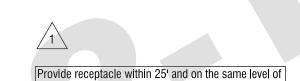
and/or photometric data if requested. If substitution is rejected, Contractor shall provide specified product. 7. Luminaire voltages to be determined by Project Electrical Engineer.

8. All luminaire sockets shall be labeled permanently, in the factory, with wattages indicated in "Lamp Specification" column, not maximum wattages.

poomoan	on column, not maximum w	rattagoo.					
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F1	Downlight Interior	ELCO EL490ICA housing  Koto Module with Pex 4" Adjustable Phenolic Baffle	2700K 120V	14 W	White Trim	Typ. Interior	
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F5	Surface mounted luminaire for entryway Exterior	Artika Glacier 1-Light LED Wall Sconce	650 lm 3000K Dimmable 120V	9.3 W		Exterior Entry	



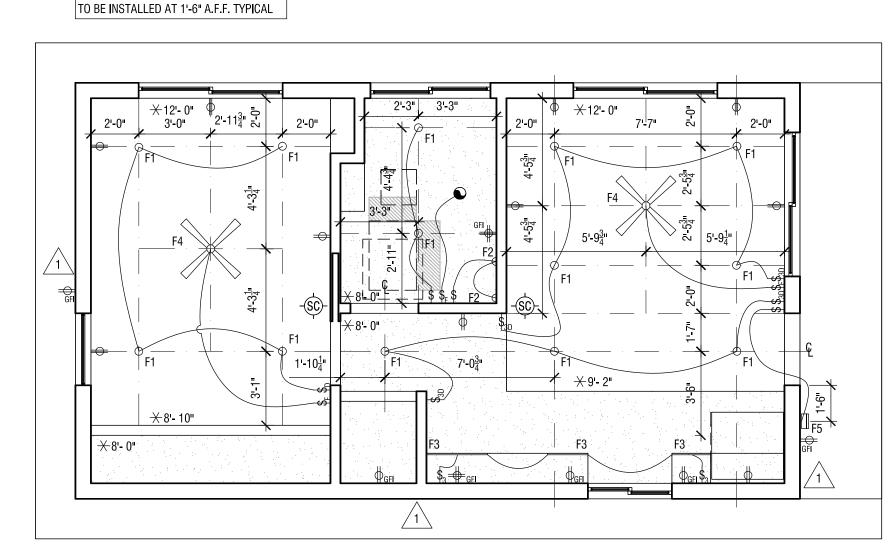
02 LIGHTING SCHEDULE SCALE: N/A

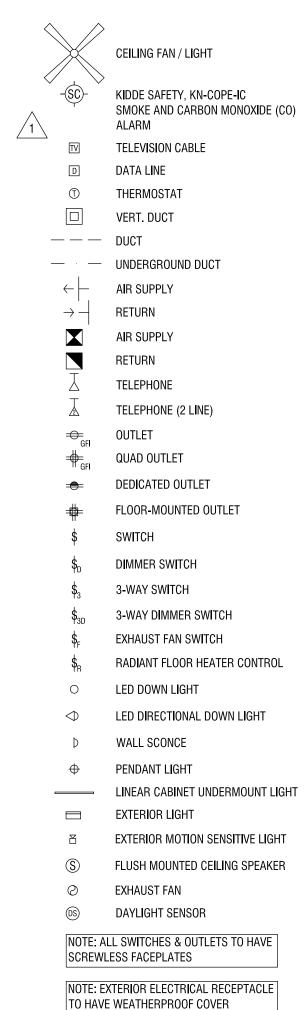


mechanical equipment. (CEC section 210.63)

NOTE: Receptacles serving countertops and Work Surfaces: a) Receptacle outlets shall not be installed in a face up position in the work surfaces. b) Receptacle outlets shall be located on or above, but not more than 20in. above the countertop or work surface. (CEC section 210.52(C)(5)) c) Receptacle outlets shall be permitted to be mounted not more than 12in. below the countertop or work surface provided the countertop does not extend more than 6 in. beyond its support base. (CEC section 210.52(C)(5) Exception) d) On island and peninsular countertops, receptacles may be mounted a maximum 12in. below countertop provided there are no back splashes or dividers and no means to mount within 20in, above countertop, such as an overhead cabinet. (CEC section 210.52(C)(5)

NOTE: EXTERIOR ELECTRICAL RECEPTACLE





DROP CEILING

VAULTED CEILING



## ADU PROGRAM

CITY OF FRESNO PLANNING AND DEVELOPMENT DEPARTMENT 2600 FRESNO STREET, 3RD FLOOR FRESNO, CA 93721

AARON NEUBERT ARCHITECTS, INC. 2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900

STRUCTURAL ENGINEER:

AARON NEUBERT CA# C-29005

NOUS ENGINEERING, INC. 600 WILSHIRE BOULEVARD, SUITE 760 LOS ANGELES, CALIFORNIA 90017 P. 213.627.6687

MEP ENGINEER:

INNODEZ DESIGN AND ENGINEERING 726 FOXBROUGH PLACE PLEASANTON, CALIFORNIA 94566 P. 424.414.0997

REVISION: DATE:

/ REVISION #2 06.03.22 PLAN CHECK CORRECTIONS



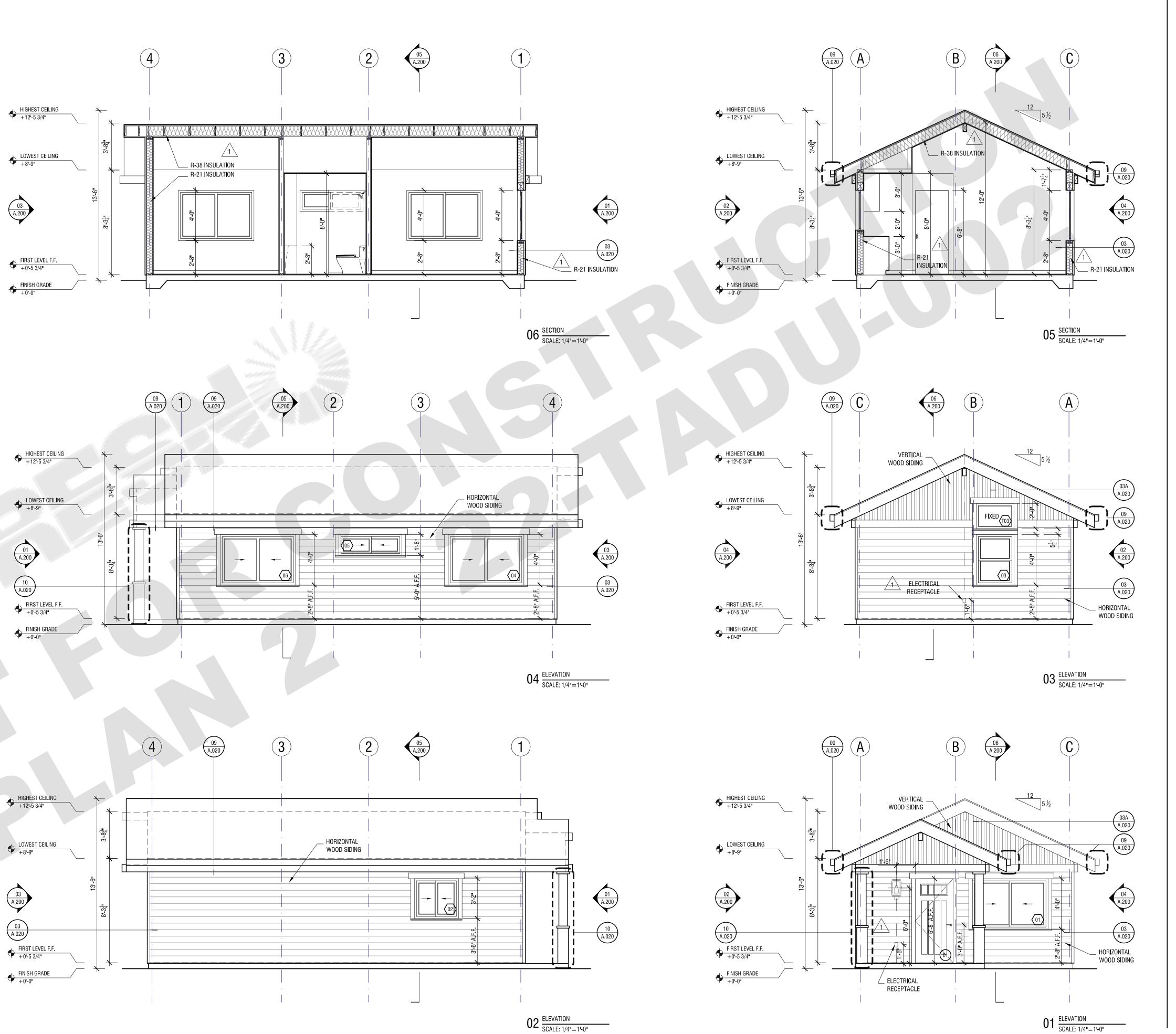
REVISION #1 04.04.22 PLAN CHECK CORRECTIONS

Project No. 2104 ADU PROGRAM CITY OF FRESNO CALIFORNIA

DRAWING TITLE: ADU 02 - CONTEMPORARY REFLECTED CEILING PLAN LIGHTING SCHEDULE

DATE: JUNE 3, 2022

SCALE: AS NOTED DRAWN BY:





## ADU PROGRAM

OWNER:

CITY OF FRESNO
PLANNING AND DEVELOPMENT DEPARTMENT
2600 FRESNO STREET, 3RD FLOOR
FRESNO, CA 93721

AARON NEUBERT ARCHITECTS, INC.

2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900 AARON NEUBERT CA# C-29005

STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC. 600 WILSHIRE BOULEVARD, SUITE 760 LOS ANGELES, CALIFORNIA 90017 P. 213.627.6687

D ENGINEED:

INNODEZ DESIGN AND ENGINEERING
726 FOXBROUGH PLACE
PLEASANTON, CALIFORNIA 94566
P. 424.414.0997

REVISION: DATE:

SUE:

REVISION #2 06.03.22 PLAN CHECK CORRECTIONS

1 REVISION #1 04.04.22 PLAN CHECK CORRECTIONS





Project No. 2104

ADU PROGRAM

CITY OF FRESNO
CALIFORNIA

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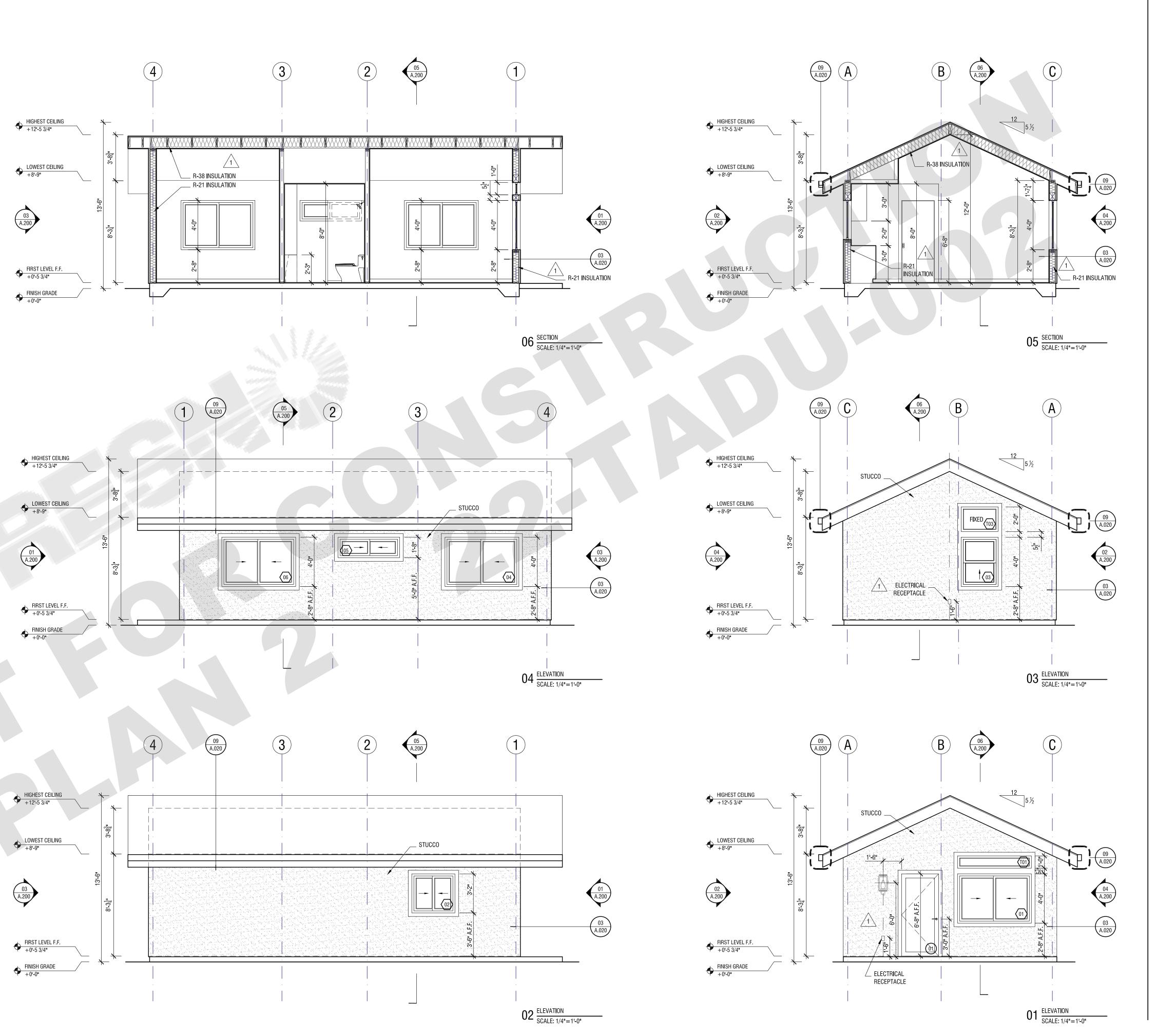
ADU 02 - CRAFTSMAN ELEVATIONS SECTIONS

DATE: JUNE 3, 2022

SCALE: 1/4=1'-0"

SCALE: 1/

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CITY OF FRESNO
PLANNING AND DEVELOPMENT DEPARTMENT
2600 FRESNO STREET, 3RD FLOOR
FRESNO, CA 93721

AARON NEUBERT ARCHITECTS, INC.

ADU PROGRAM

2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900 AARON NEUBERT CA# C-29005

STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC. 600 WILSHIRE BOULEVARD, SUITE 760 LOS ANGELES, CALIFORNIA 90017 P. 213.627.6687

D ENOINEED.

INNODEZ DESIGN AND ENGINEERING
726 FOXBROUGH PLACE
PLEASANTON, CALIFORNIA 94566
P. 424.414.0997

REVISION: DATE:

E:

REVISION #2 06.03.22 PLAN CHECK CORRECTIONS

1 REVISION #1 04.04.22 PLAN CHECK CORRECTIONS



Project No. 2104
ADU PROGRAM
CITY OF FRESNO
CALIFORNIA

DRAWING TITLE:

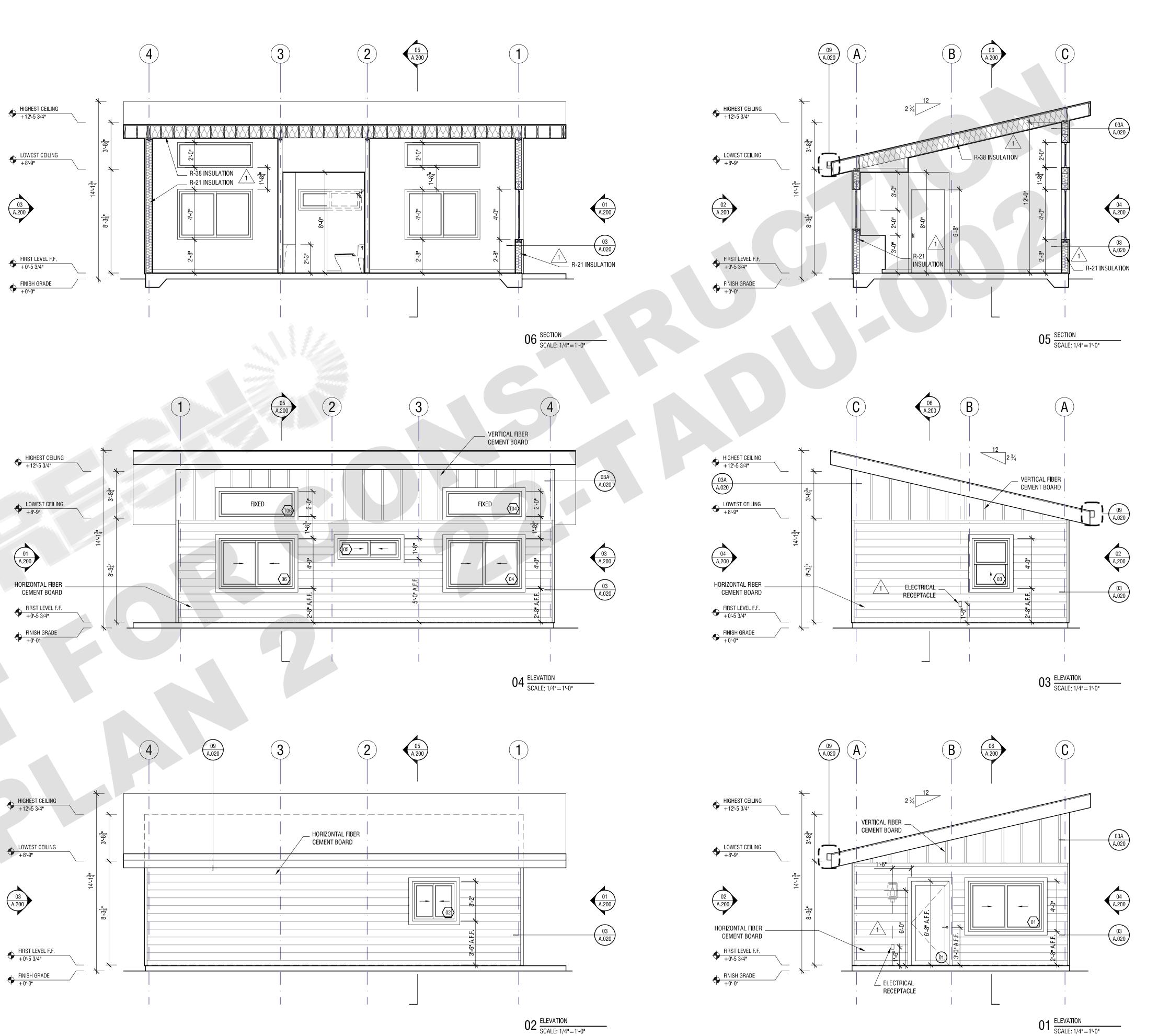
ADU 02 - GABLE ELEVATIONS SECTIONS

DATE: JUNE 3, 2022

SCALE: 1/4=1'-0"

SCALE: 1,
DRAWN BY:

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# AADON NEUDEDT ADOLUTEOTO

#### AARON NEUBERT ARCHITECTS

## ADU PROGRAM

OWNER:

CITY OF FRESNO
PLANNING AND DEVELOPMENT DEPARTMENT
2600 FRESNO STREET, 3RD FLOOR
FRESNO, CA 93721

## AARON NEUBERT ARCHITECTS, INC.

2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900

AARON NEUBERT CA# C-29005

#### STRUCTURAL ENGINEER:

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P. 424.414.0997

REVISION: DATE:

ISSUE:

REVISION #2 06.03.22 PLAN CHECK CORRECTIONS

REVISION #1 04.04.22 PLAN CHECK CORRECTIONS



# Project No. 2104 ADU PROGRAM CITY OF FRESNO CALIFORNIA

ADU 02 - CONTEMPORARY
ELEVATIONS
SECTIONS

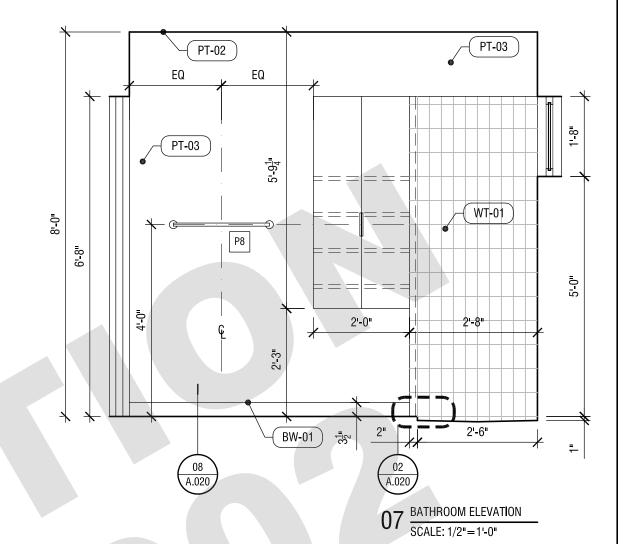
DATE: JUNE 3, 2022

SCALE: 1/4=1'-0"

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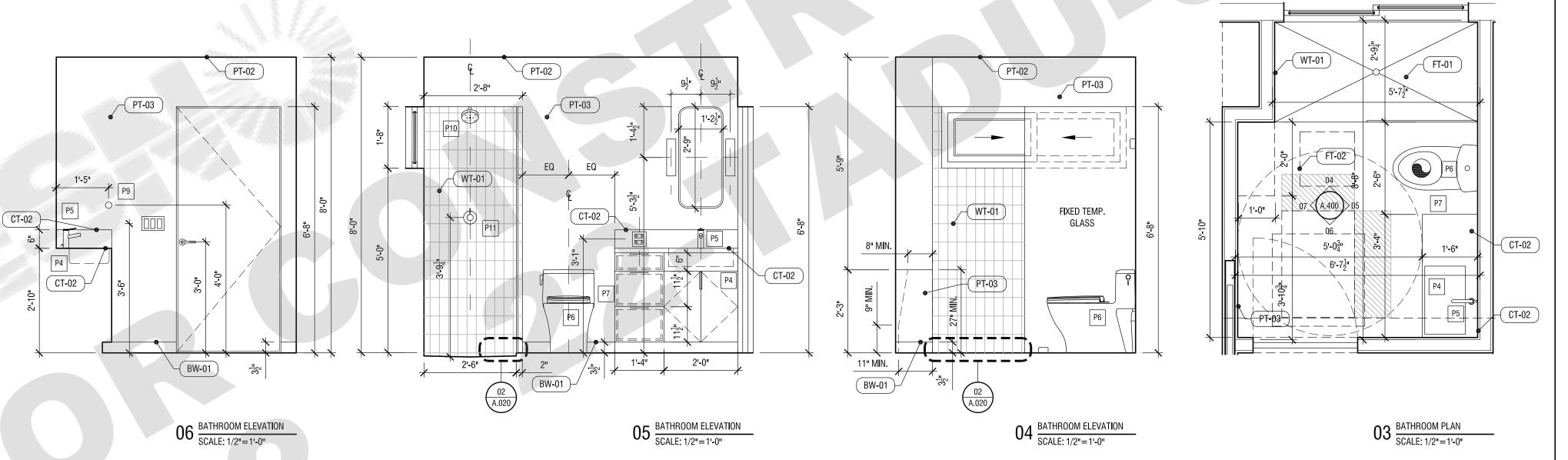
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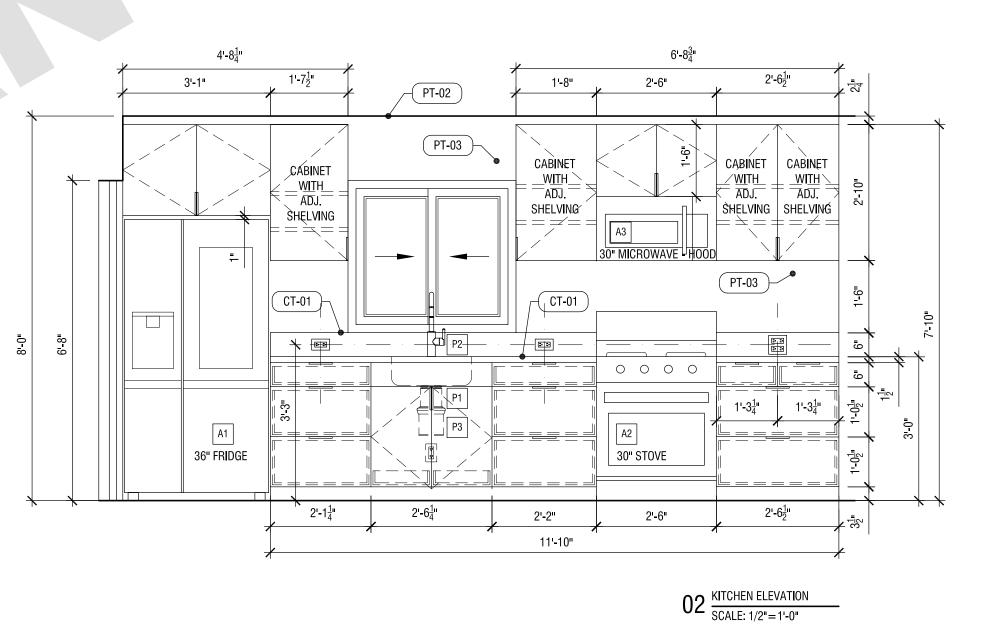
ATER <b>I</b> ALS AND	PAINT SCHEDULE									
D TAG	TYPE	DESCRIPTION	LOCATION	MANUFACTURER	MODEL #	SPECIES / STAIN	COLOR / FINISH	SIZE	SOURCE	COMMENTS / NOTES
Г-01	PAINT EXTERIOR		INTERIOR							
02	PAINT INTERIOR		INTERIOR							
-03	PAINT INTERIOR		INTERIOR							
	FLOOR	LIVIN	IG ROOM, KITCHEN, BEDROOMS,							
<i>N</i> -01			HALLWAY, CLOSETS							
-01	FLOOR TILE		BATHROOM							
T-02	FLOOR TILE		BATHROOM							
W-01	BASEBOARD	LIVIN	IG ROOM, KITCHEN, BEDROOMS, HALLWAY, CLOSETS							
T-01	COUNTERTOP		KITCHEN							
Т-02	COUNTERTOP		ВАТН							
/T-01	WALL TILE		ВАТН							

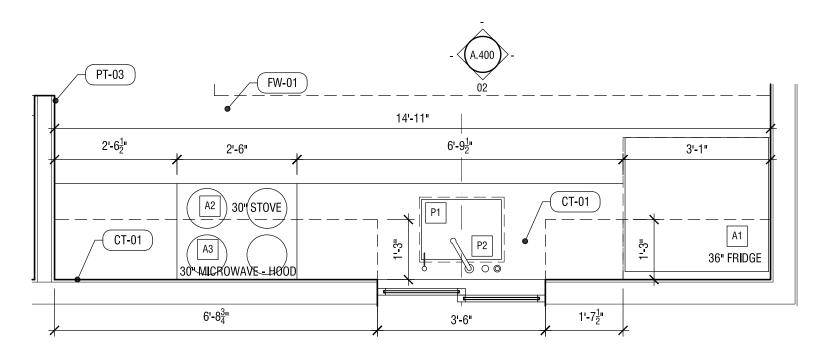


UN <b>I</b> T	QTY	TYPE	LOCATION	MANUFACTURER	MODEL #	COLOR/FINISH	COMMENTS
P1	1	KITCHEN SINK	KITCHEN				
P2	1	KITCHEN FAUCET	KITCHEN				
Р3	1	GARBAGE DISPOSAL W/CORD	KITCHEN				
P4	1	LAVATORY SINK	ВАТН				
P5	1	SINK FAUCET	BATH				
P6	1	TOILET	ВАТН				
P7	1	TOILET PAPER HOLDER	ВАТН				
P8	1	24" TOWEL BAR	BATH				
P9	1	SINGLE ROBE HOOK	ВАТН				
P10	1	SHOWERHEAD	BATH			20	
P11	2	THERMO. VALVE TRIM	BATH				

APPLI	ANCE S	SCHEDULE					
UNIT	QTY	TYPE	LOCATION	MANUFACTURER	MODEL #	COLOR/FINISH	COMMENTS
A1	1	36" REFRIDGERATOR	KITCHEN				
A2	1	30" STOVE	KITCHEN				
А3	1	30" MICROWAVE - HOOD	KITCHEN				







01 KITCHEN PLAN
SCALE: 1/2"=1'-0"

#### AARON NEUBERT ARCHITECTS

### ADU PROGRAM

CITY OF FRESNO PLANNING AND DEVELOPMENT DEPARTMENT 2600 FRESNO STREET, 3RD FLOOR FRESNO, CA 93721

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Project No. 2104
ADU PROGRAM CITY OF FRESNO CALIFORNIA

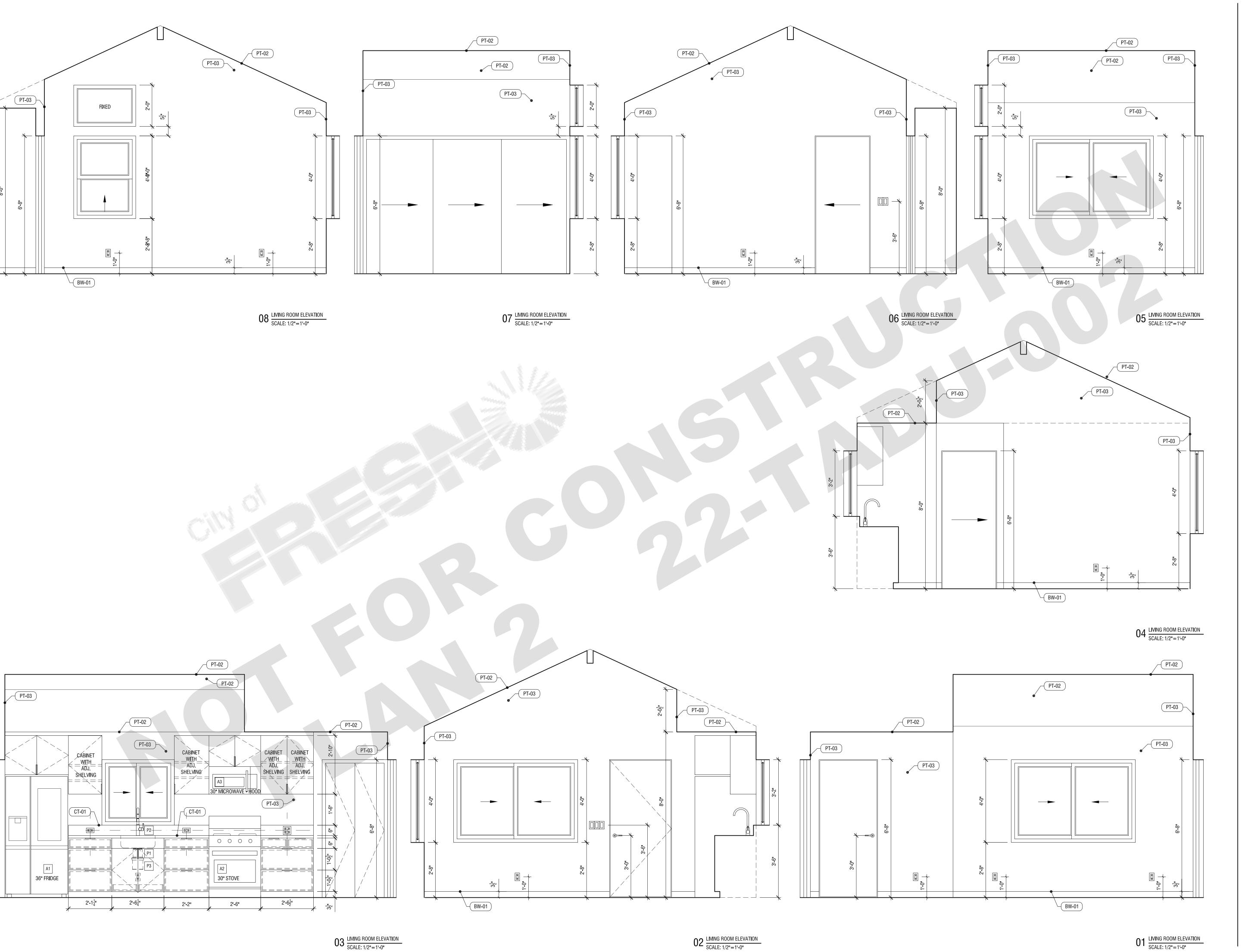
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ADU 02 INTERIOR ELEVATIONS

DATE: JUNE 3, 2022 SCALE: 1/2=1'-0"

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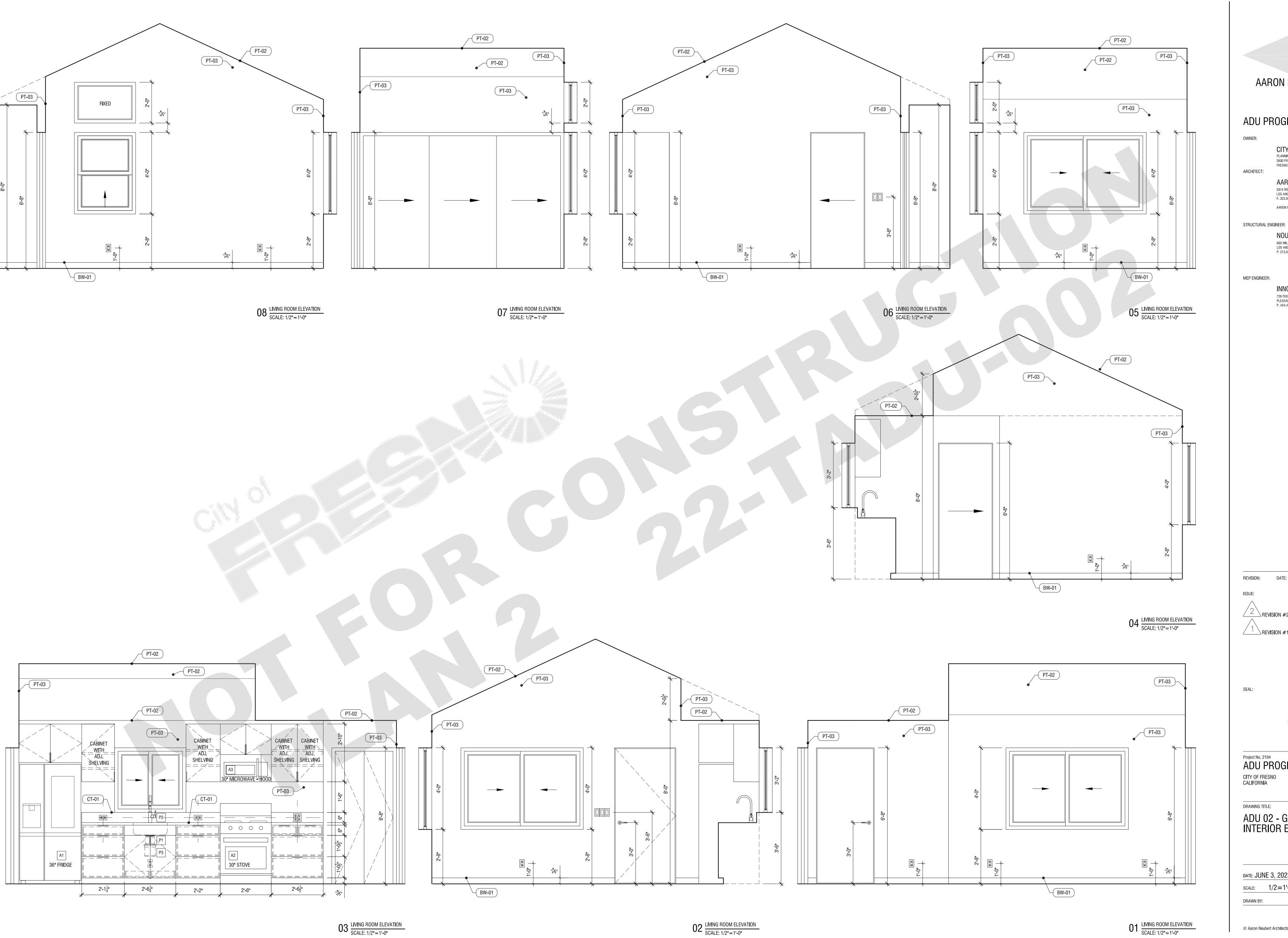
ADU 02 - CRAFTSMAN INTERIOR ELEVATIONS

DATE: JUNE 3, 2022

SCALE: 1/2=1'-0"

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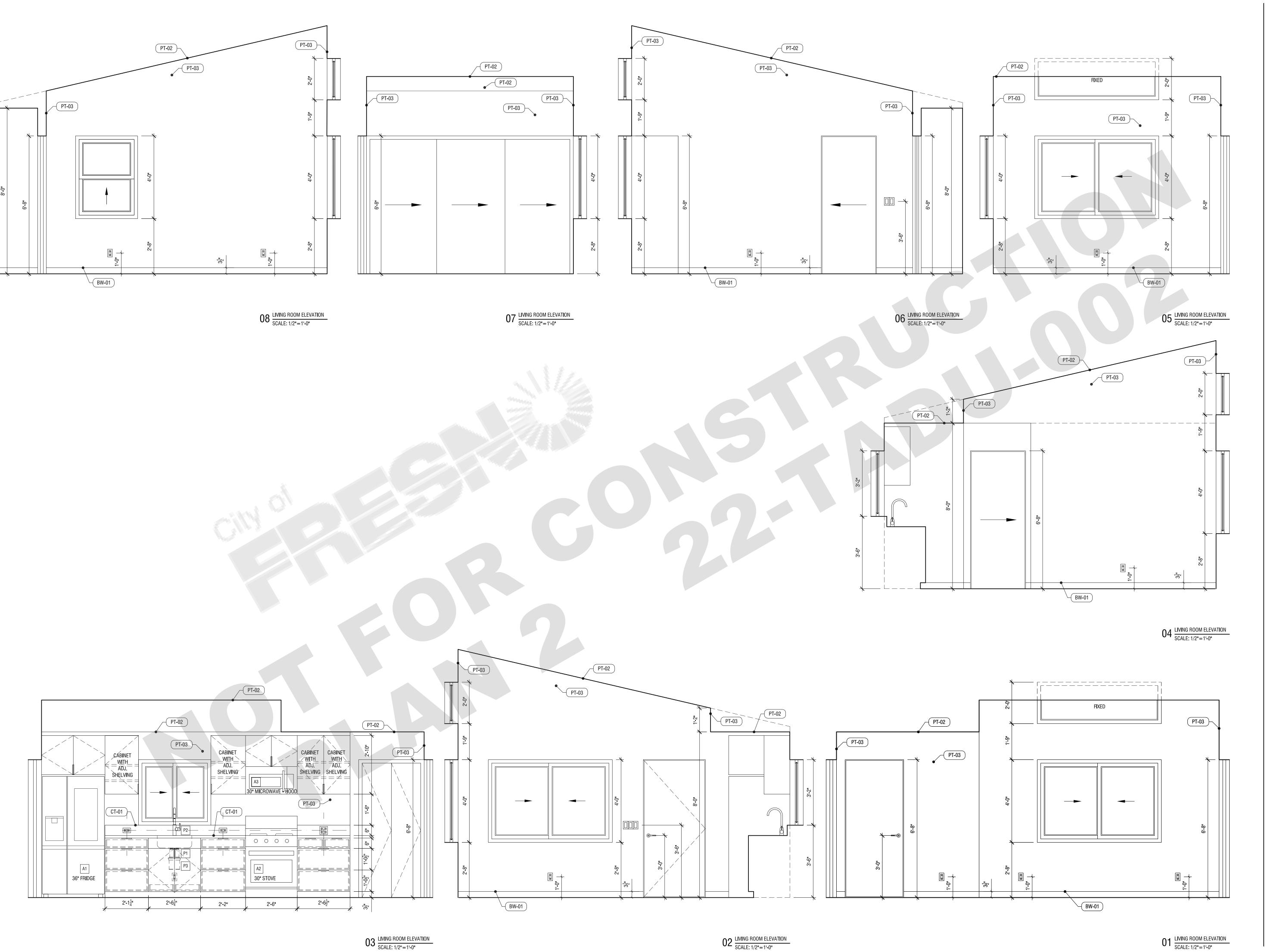
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ADU 02 - GABLE INTERIOR ELEVATIONS

DATE: JUNE 3, 2022

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CALIFORNIA

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date: JUNE 3, 2022

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SCALE: 1/

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CAST IN PLACE CONCRETE PROPORTION, MIX. TRANSPORT, AND PLACE CAST-IN-PLACE CONCRETE IN ACCORDANCE WITH ACI 301

"SPECIFICATIONS FOR STRUCTURAL CONCRETE," UON. CONCRETE IS REINFORCED AND CAST-IN-PLACE UNLESS OTHERWISE NOTED. WHERE REINFORCING IS NOT SPECIFICALLY SHOWN OR WHERE DETAILS ARE NOT GIVEN, PROVIDE REINFORCING SIMILAR TO THAT SHOWN

FOR SIMILAR CONDITIONS, SUBJECT TO REVIEW BY THE OWNER'S REPRESENTATIVE. ROUGHEN CONCRETE SURFACES OF CONSTRUCTION JOINTS TO 1/4 INCH AMPLITUDE AND CLEAN OF LAITANCE, FOREIGN MATTER, AND LOOSE PARTICLES. LOCATE CONSTRUCTION JOINTS AS SHOWN ON THE DRAWINGS.

SUBMIT ALTERNATE JOINT LOCATIONS OR JOINTS NOT SHOWN TO THE OWNER'S REPRESENTATIVE FOR REVIEW AND APPROVAL PRIOR TO PROCEEDING WITH THE WORK. AT LOCATIONS WHERE CONCRETE IS CAST AGAINST EXISTING CONCRETE, ROUGHEN CONTACT SURFACES TO 1/4 INCH AMPLITUDE AND CLEAN OF LAITANCE, FOREIGN MATTER, AND LOOSE PARTICLES.

AT LOCATIONS WHERE CONCRETE IS CAST AGAINST EXISTING MASONRY, THOROUGHLY ROUGHEN CONTACT SURFACES BY LIGHT SANDBLASTING OR OTHER SUITABLE MEANS AND CLEAN OF LAITANCE, FOREIGN MATTER, AND LOOSE PARTICLES.

REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATIONS OF ADDITIONAL CONCRETE CURBS AND HOUSEKEEPING PADS NOT SHOWN. CONTINUOUSLY MOIST CURE CONCRETE SLABS-ON-GRADE FOR 7 DAYS MINIMUM. WATER FOG SPRAYS,

PONDING, SATURATED ABSORPTIVE COVERS, OR MOISTURE RETAINING COVERS MAY BE USED. CURING COMPOUNDS CAN BE USED BASED ON SATISFACTORY PERFORMANCE ON PREVIOUS APPLICATIONS. CONTRACTOR TO SUBMIT SPECIFICATIONS FOR REVIEW AND APPROVAL

NON-SHRINK GROUT: NON-METALLIC AGGREGATE TYPE, COMPLYING WITH ASTM C1107 AND CAPABLE OF DEVELOPING A MINIMUM COMPRESSIVE STRENGTH OF 7,000 PSI AT 28 DAYS.

CONCRETE TYPES:

CC-9

<u>LOCATION</u>	28 DAY fc	<u>TYPE</u>	RATIO	MAX AGGREGATE SIZE
ALL	2500 PSI	NORMAL WEIGHT	0.45	3/4"
CONCRETE CLEAR COVER TO REINF	ORCING BAF	RS IS AS FOLLOWS:		
	<u>LOCATION</u>			CLEAR COVER
CONCRETE CAST AGAINST AND PE EXPOSED TO EARTH	RMANENTLY			
- ALL BARS				3"
CONCRETE EXPOSED TO EARTH OF	R WEATHER:			2"
- #5 BAR, W31 OR D31 WIRE, AND S	MALLER			1 1/2"
CONCRETE NOT EXPOSED TO EAR	TH OR WEATI	HER:		,
OLADO MALLO IOIOTO MALANDI	18 BARS			1 1/2"
<ul><li>SLABS, WALLS, JOISTS: #14 AND #</li></ul>				
- SLABS, WALLS, JOISTS: #14 AND # - SLABS, WALLS, JOISTS: #11 AND S	SMALLER			3/4"

FRAMING LUMBER: DOUGLAS FIR (COAST REGION) GRADED AND MARKED IN ACCORDANCE WITH THE STD GRADING RULES NO. 17 OF THE WEST COAST LUMBER INSPECTION BUREAU (WCLIB) OR WESTERN LUMBER GRADING RULES, OF THE WESTERN WOOD PRODUCTS ASSOCIATION (WWPA). USE LUMBER OF THE FOLLOWING

- A. SILLS: STUD GRADE PRESSURE OR PRESERVATIVE TREATED, NATURALLY DURABLE, OR FOUNDATION GRADE REDWOOD; 19% MOISTURE CONTENT, UON.

- B. STUDS: STUD GRADE; 19% MOISTURE CONTENT, UON.

- C. JOISTS, PLANKS AND PLATES: DF #2; 15% MOISTURE CONTENT, UON.

- D. BEAMS, DF #1; 19% MOISTURE CONTENT, UON. - E. POSTS, DF #1; 19% MOISTURE CONTENT, UON.

- F. FRAMING, BLOCKING AND BRIDGING: STUD GRADE; 15% MOISTURE CONTENT, UON.

- G. PLYWOOD BLOCKING: DF #2; 19% MOISTURE CONTENT. - H. BACKING: PER CONSTRUCTION; 19% MOISTURE CONTENT

MANUFACTURED LUMBER:

- A. LVL: MICROLAM LVL 1.9E, ICC ESR-1387 & LARR 25202.

- B. PSL: PARALLAM PSL 2.0E, ICC ESR-1387 & LARR 25202. PANEL SHEATHING: IDENTIFY WOOD STRUCTURAL PANELS WITH THE APPROPRIATE TRADEMARK OF APA-THE ENGINEERED WOOD ASSOCIATION AND MEET THE REQUIREMENTS OF THE VOLUNTARY PRODUCT STD PS-1 OR

PS-2 AND APA PRP-108 PERFORMANCE STD.

- A. PANEL SHEATHING TO BE EXPOSURE 1.

- B. PLYWOOD PANELS TO BE 5-PLY MINIMUM, EXCEPT 3/8" PANELS TO BE 3-PLY MINIMUM. - C. OSB PANELS MAY BE USED WITH APPROVAL OF SEOR.

- D. PLYWOOD TO BE C-C GRADE AT LOCATIONS EXPOSED TO WEATHER; CD GRADE ELSEWHERE.

- E. SHEATH ALL EXTERIOR WALLS WITH 15/32" PLYWOOD WITH 10d NAILS WITH (6",6",12") OC, (BN, EN, FN).

- E PROVIDE THE FOLLOWING GRADE AND SPAN RATINGS

PROVIDE THE FOLLOWING GRA	ADE AND SPAN RATINGS:	
PANEL THICKNESS	MINIMUM GRADE	ROOF/FLOOR RATING
3/8	STRUCTURAL 1	24/0
7/16	STRUCTURAL 1	24/16
15/32	STRUCTURAL 1	32/16
19/32 AND 5/8	CD/CC	40/20
3/4	CD/CC	48/24
7/8 AND 1	CD/CC	54/32
1 1/8	CD/CC	60/48

#### ROUGH HARDWARE:

- A. NAILS: COMMON WIRE NAILS, FEDERAL SPECIFICATION FF-N-105B. STANDARD LENGTHS UON USE HOT-DIPPED ZINC-COATED GALVANIZED NAILS FOR EXTERIOR INSTALLATIONS AND WHEN PENETRATING

PRESSURE TREATED OR FIRE-RETARDANT LUMBER. - B. BOLTS AND THREADED RODS: ASTM A307, SQ OR HEXAGONAL HEAD MACHINE BOLTS WITH ASTM A563 NUTS. USE MALLEABLE IRON WASHERS UNDER HEAD AND NUT WHEN IN CONTACT WITH WOOD, AT SILL PLATES USE 2"x2"x3/16" MINIMUM PLATE WASHERS. AT ALL SHEARWALL SILL PLATE ANCHORS, USE THE FOLLOWING PLATE

5/8" DIA ANCHOR BOLTS = 3"X3"X1/4" SQ. WASHER

3/4" DIA ANCHOR BOLTS = 3"X3"X5/16" SQ. WASHER

7/8" DIA ANCHOR BOLTS = 3"X3"X5/16" SQ. WASHER 1" DIA ANCHOR BOLTS = 3 1/2"X3 1/2"X3/8" SQ. WASHER

- C. LAG SCREWS: ASTM A307, ANSI/ASME STANDARD B18.2.1. USE ANSI B18.22.1 WASHERS UNDER HEAD WHEN IN CONTACT WITH WOOD.

- D. SCREWS: ASTM A307, ANSI/ASME STANDARD B18.6.1. USE CADMIUM-PLATED PAN OR ROUND HEADED SCREWS AT STEEL TO WOOD AND WOOD TO WOOD CONNECTIONS.

- E. BOLTS, NUTS, WASHERS, STRAPS AND OTHER HARDWARE EXPOSED TO THE WEATHER TO BE HOT-DIPPED GALVANIZED OR STAINLESS STEEL. - F. FRAMING CLIPS, SHEET METAL STRAPS, ETC.: SIMPSON, UNIVERSAL, OR EQUIVALENT, WITH LARR REPORTS.

DESIGNATIONS ON DRAWINGS ARE BASED ON SIMPSON CATALOGUE NUMBERS (IAPMO UES ER 112 & LARR 25814). PROVIDE THE TYPE OF NAILS SPECIFIED BY THE MANUFACTURER AND FULLY DRIVE NAILS INTO ALL HOLES OF THE CONNECTOR UNLESS NOTED OTHERWISE ON THE PLANS. ALL CONNECTORS SHALL BE GALVANIZED OR HAVE ANOTHER FACTORY APPLIED FINISH. ALL STEEL FRAMING HANGERS TO BE TORSIONAL RESTRAINT. SOLID BLOCKING REQUIRED BETWEEN JOISTS WHERE TORSIONAL RESTRAINT HANGERS DO NOT

BOLT AND SCREW INSTALLATION

- A. DRILL BOLT HOLES 1/32 TO 1/16 (MAX) INCH LARGER IN DIA THAN THE BOLT NOMINAL DIA.

- B. DRILL PRE-BORED LEAD HOLES FOR WOOD SCREWS AS FOLLOWS.

1. PROVIDE LEAD HOLE 40% - 70% OF THREADED SHANK DIA AND FULL DIA FOR SMOOTH SHANK PORTION. 2. DRILL LEAD HOLE FOR THE SHANK TO A DEPTH EQUAL TO THE LENGTH OF THE UNTHREADED PORTION IN THE MAIN MEMBER. USE A DRILL BIT 7/8 THE DIA OF THE WOOD SCREW.

3. EXTEND THE LEAD HOLE FOR THE THREADED PORTION OF THE SCREW WITH A DRILL BIT WHOSE DIA IS 40%-70% THE DIA OF THE SCREW AT THE ROOT OF THE THREAD.

4. INSERT THE SCREW INTO LEAD HOLE BY TURNING. DO NOT DRIVE WITH A HAMMER.

5. LUBRICATE WITH SOAP OR BEESWAX TO FACILITATE INSTALLATION.

- C. DRILL PRE-BORED LEAD HOLES FOR LAG SCREWS AS FOLLOWS.

1. PROVIDE LEAD HOLE 40% - 70% OF THREADED SHANK DIA AND FULL DIA FOR SMOOTH SHANK PORTION.

2. DRILL LEAD HOLE FOR THE SHANK TO A DEPTH EQUAL TO THE LENGTH OF THE UNTHREADED PORTION IN THE MAIN MEMBER. USE A DRILL BIT OF THE SAME DIA AS THE LAG SCREW. 3. EXTEND THE LEAD HOLE FOR THE THREADED PORTION OF THE LAG SCREW WITH A DRILL BIT WHOSE DIA IS

60 PERCENT OF THE NOMINAL LAG SCREW DIA. 4. INSERT LAG SCREW INTO LEAD HOLE BY TURNING. DO NOT DRIVE WITH A HAMMER.

5. LUBRICATE WITH SOAP OR BEESWAX TO FACILITATE INSTALLATION.

**ROUGH CARPENTRY** 

HOLD DOWN CONNECTOR BOLTS INTO WOOD FRAMING REQUIRE APPROVED PLATE WASHERS: AND HOLD DOWNS SHALL BE FINGER TIGHT AND 1/2 WRENCH TURNED JUST PRIOR TO COVERING WALL FRAMING. CONNECTOR BOLTS INTO WOOD FRAMING REQUIRE STEEL PLATE WASHERS ON THE POST ON THE OPPOSITE SIDE OF ANCHORAGE DEVICE. PLATE SHALL BE 0.299x3x3 IN MIN.

HOLD-DOWN HARDWARE MUST BE SECURED IN PLACE PRIOR TO FOUNDATION INSPECTION. INSTALL SOLID BLOCKING BETWEEN JOISTS AT ENDS AND OVER SUPPORTS. PROVIDE 2 INCH BY 3 INCH CROSS BRIDGING, METAL BRIDGING, OR SOLID BLOCKING BETWEEN JOISTS IN SPANS EQUALLY SPACED 8 FEET OC MAXIMUM AND WHERE INDICATED.

DO NOT USE WOOD SHINGLE SHIMS UNDER STUDS, JOISTS, BEAMS, OR POSTS. NAILING:

- A. DRIVE NAILS PERPENDICULAR TO THE GRAIN, UON

- B. PREDRILLED HOLES TO 3/4 OF NAIL DIA WHERE SPECIFIED AND WHEN WOOD TENDS TO SPLIT.

- C. AIR-DRIVEN NAILS TO BE FULL-HEADED NAILS. DO NOT OVERDRIVE NAILS. - D. PANEL SHEATHING

1. AT DIAPHRAGM SHEATHING, USE RING SHANK NAILS. USE SMOOTH SHANK NAILS AT WALLS. 2. USE OF MACHINE NAILING IS SUBJECT TO A SATISFACTORY JOB SITE DEMONSTRATION FOR EACH PROJECT. AND APPROVAL BY THE OWNER'S REPRESENTATIVE. NAIL HEADS THAT PENETRATE THE OUTER PLY MORE THAN

WOULD BE NORMAL FOR A HAND HAMMER OR IF THE MINIMUM ALLOWABLE EDGE DISTANCES ARE NOT MAINTAINED THE INSTALLATION IS UNSATISFACTORY. MACHINE NAILING IS NOT APPROVED IN 5/16" OR LESS 3. DIAPHRAGM NAILING TO BE INSPECTED BEFORE COVERING. FACE GRAIN OF PLYWOOD TO BE

PERPENDICULAR TO SUPPORTS. DIAPHRAGM SHEATHING MUST BE BLOCKED AT EDGES. PLYWOOD SPANS SHALL CONFORM WITH TABLE 2304.8(1).

4. GLUE FLOOR SHEATHING AT ALL POINTS OF CONTACT.

F PROVIDE MINIMUM NAU ING PER TARLE 2304.9.1 OF THE IRC/CRC. LION.

FASTENING SCHEDULE				
	CONNECTION	NAILING	<u>STAPLES</u>	LOCATION
1	JOIST TO SILL OR GIRDER	3-8d COMMON	3-3" 14 GA STAPLES	TOE NAIL
2	BRIDGING TO JOISTS	2-8d COMMON	2-3" 14 GA STAPLES	TOE NAIL, EA END
3	SOLE PLATE TO JOISTS OR BLOCKING	16d COMMON @ 16" OC	3" 14 GA STAPLES @ 12" OC	TYP FACE
4	TOP PLATE TO STUD	2-16d COMMON	3-3" 14 GA STAPLES	END NAIL
5A	STUD TO SOLE PLATE	4-8d COMMON	3-3" 14 GA STAPLES	TOE NAIL
5B	STUD TO SOLE PLATE	2-16d COMMON	3-3" 14 GA STAPLES	END NAIL
6	DOUBLE STUDS	16d COMMON @ 24" OC	3" 14 GA STAPLES @ 8" OC	FACE
7A	DOUBLE TOP PLATE	16d COMMON @ 16" OC	3" 14 GA STAPLES @ 12" OC	TYP FACE
7B	DOUBLE TOP PLATE	8-16d COMMON	12-3" 14 GA STAPLES	LAP
8	BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE	3-8d COMMON	3-3" 14 GA STAPLES	TOE NAIL
9	RIM JOISTS TO TOP PLATE	8d COMMON @ 6" OC	3" 14 GA STAPLES @ 6" OC	TOE NAIL
10	TOP PLATES, LAPS AND INTERSECTIONS	2-16d COMMON	3-3" 14 GA STAPLES	FACE
11	CONT HEADER, TWO PIECES	16d COMMON	-	16" OC ALONG ED
12	CEILING JOISTS TO PLATE	3-8d COMMON	5-3" 14 GA STAPLES	TOE NAIL
13	CONT HEADER TO STUD	4-8d COMMON	-	TOE NAIL
14	CEILING JOISTS, LAPS OVER PARTITIONS	3-16d COMMON	3-3" 14 GA STAPLES	FACE
15	CEILING JOISTS PARALLEL TO RAFTERS	3-16d COMMON	4-3" 14 GA STAPLES	FACE
16	RAFTER TO PLATE	3-8d COMMON	3-3" 14 GA STAPLES	TOE NAIL
17A	BUILT-UP GIRDER BEAMS	20d COMMON @ 32" OC	3" 14 GA STAPLES @ 24" OC	FACE NAIL @ T&B STAGGERED
17B	BUILT-UP GIRDER BEAMS	2-20d COMMON	3-3" 14 GA STAPLES	FACE NAIL @ END EACH SPLICE
18	JOIST TO BAND JOIST	3-16d COMMON	4-3" 14 GA STAPLES	TOE NAIL

REINFORCING STEEL

FABRICATE AND PLACE REINFORCING STEEL IN ACCORDANCE WITH ACI 315 "DETAILS AND DETAILING CONCRETE REINFORCING" AND ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE," UON.

ACCURATELY POSITION, SUPPORT, AND SECURE REINFORCEMENT FROM DISPLACING DUE TO FORMWORK, CONSTRUCTION, OR CONCRETE PLACEMENT OPERATIONS. LOCATE AND SUPPORT REINFORCING BY METAL

CHAIRS, RUNNERS, BOLSTERS, SPACERS, AND HANGERS AT A MAXIMUM 3-FOOT SPACING. TERMINATE REINFORCING STEEL IN STD HOOKS, UNLESS OTHERWISE SHOWN.

UNDERPINNING AND PROTECTION OF EXISTING CONSTRUCTION.

RE-4 PROVIDE REINFORCING SHOWN OR NOTED CONTINUOUS IN LENGTHS AS LONG AS PRACTICABLE. RE-5

REINFORCING STEEL #8 AND LARGER AND ALL REINFORCING STEEL TO BE WELDED TO BE ASTM A706, 60KSI. ALL

OTHER REINFORCING STEEL TO BE ASTM A615, 60KSI. SMOOTH DOWELS IN SLAB ON GRADE TO BE ASTM A36, 36KSI.

RE-2

FOUNDATION AND SITE WORK

GROUNDWATER IS NOT EXPECTED TO BE A FACTOR IN DEVELOPMENT OF SITE. FN-1 LOCATE AND PROTECT EXISTING UTILITIES TO REMAIN DURING AND/OR AFTER CONSTRUCTION.

REMOVE ABANDONED FOOTINGS, UTILITIES, ETC. WHICH INTERFERE WITH NEW CONSTRUCTION, UNLESS NOTIFY THE OWNER'S REPRESENTATIVE IF ANY BURIED STRUCTURES NOT INDICATED, SUCH AS CESSPOOLS,

CISTERNS, FOUNDATIONS, ETC., ARE FOUND. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING,

REMOVE LOOSE SOIL AND STANDING WATER FROM FOUNDATION EXCAVATIONS PRIOR TO PLACING CONCRETE. FN-7 IF ADVERSE SOIL CONDITIONS ARE ENCOUNTERED, NOTIFY INSPECTOR AND SOILS REPORT MAY BE REQUIRED. STRUCTURAL TEST AND INSPECTIONS

AN INDEPENDENT TESTING AGENCY AND SPECIAL INSPECTORS WILL BE RETAINED BY THE OWNER TO PERFORM THE FOLLOWING TESTS AND INSPECTION. PROVIDE ACCESS AND FURNISH SAMPLES TO THE AGENCY AS REQUIRED BY THE CONTRACT DOCUMENTS.

CONTRACTORS RESPONSIBLE FOR THE CONSTRUCTION OF A WIND OR SEISMIC FORCE RESISTING SYSTEM/ COMPONENT AS LISTED IN THE "STATEMENT OF SPECIAL INSPECTION" SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE LADBS INSPECTORS AND THE OWNER PRIOR TO THE COMMENCEMENT OF WORK ON SUCH A SYSTEM OR COMPONENT PER 1704.4.

IF INITIAL TESTS OR INSPECTIONS MADE BY THE OWNER'S TESTING AGENCY REVEAL THAT ANY PORTION OF THE WORK DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS, ADDITIONAL TESTS, INSPECTIONS, AND NECESSARY REPAIRS WILL BE MADE AT THE CONTRACTOR'S EXPENSE.

THE FOLLOWING ITEMS REQUIRE TESTS AND INSPECTIONS IN ACCORDANCE WITH THE REQUIREMENTS OF THE CHAPTER "STRUCTURAL TEST AND INSPECTIONS" OF THE CODE OF THE GOVERNING JURISDICTION AS NOTED IN THE GENERAL SECTION OF THESE GENERAL NOTES. AN "X" PRESENT IN COLUMN "C" INDICATES CONTINUOUS INSPECTION & "X" PRESENT IN COLUMN "P" INDICATES PERIODIC INSPECTION.

	CONCRETE		
	VERIFICATION AND INSPECTIONS	С	Р
1.	INSPECTION OF REINFORCING STEEL, PRESTRESSING TENDONS, AND VERIFY PLACEMENTS.	-	Х
2.	INSPECT ANCHORS CAST IN CONCRETE.	-	Х
3.	INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS.		
	A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	Х	-
	B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4A.	-	X
4.	VERIFYING USE OF REQUIRED DESIGN MIX.	-	Х
5.	PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	Х	-
6.	INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	Х	-
7.	VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	-	Х
8.	INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF CONCRETE MEMBER BEING FORMED.	•	Х

GENERAL REQUIREMENTS MATERIALS AND WORKMANSHIP TO CONFORM WITH THE 2019 EDITION OF THE CALIFORNIA BUILDING CODE AND

THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. REFERENCE TO CODES, RULES, REGULATIONS, STANDARDS, MANUFACTURER'S INSTRUCTIONS OR REQUIREMENTS OF REGULATORY AGENCIES IS TO THE LATEST PRINTED EDITION OF EACH IN EFFECT AT THE

DATE OF SUBMISSION OF BID UNLESS THE DOCUMENT DATE IS SHOWN. VERIFY ALL DIMENSIONS, ELEVATIONS, & SITE CONDITIONS BEFORE STARTING WORK.

REFER TO ARCHITECTURAL DRAWINGS FOR EXTERIOR SLABS.

DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, USE SIMILAR DETAILS OF CONSTRUCTION, SUBJECT TO REVIEW BY THE OWNER'S REPRESENTATIVE.

THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES AND FOR CHECKING DIMENSIONS. NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES AND RESOLVE BEFORE PROCEEDING WITH THE WORK.

DO NOT SCALE THE DRAWINGS. PROVIDE MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES INCLUDE, BUT MAY NOT BE LIMITED TO, BRACING AND SHORING FOR LOADS DURING CONSTRUCTION. RETAIN A REGISTERED CIVIL ENGINEER WHOM IS PROPERLY QUALIFIED TO DESIGN BRACING, SHORING, ETC. VISITS TO THE SITE BY THE OWNER'S REPRESENTATIVE WILL NOT INCLUDE OBSERVATION OF THE ABOVE NOTED ITEMS. INFORMATION SHOWN ON THE DRAWINGS RELATED TO EXISTING CONDITIONS REPRESENTS THE PRESENT KNOWLEDGE, BUT WITHOUT GUARANTEE OF ACCURACY. REPORT CONDITIONS THAT CONFLICT WITH THE CONTRACT DOCUMENTS TO THE OWNER'S REPRESENTATIVE. DO NOT DEVIATE FROM THE CONTRACT

DOCUMENTS WITHOUT WRITTEN DIRECTION FROM THE OWNER'S REPRESENTATIVE. REFER TO ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION OF FLOOR, ROOF AND WALL OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS. COORDINATE THE SIZE AND LOCATION OF OPENINGS ASSOCIATED WITH, BUT NOT LIMITED TO, ELECTRICAL, MECHANICAL AND PLUMBING TRADES. SUBMIT FINAL SIZING AND LOCATION REQUIREMENTS OF OPENINGS TO THE OWNER'S REPRESENTATIVE FOR REVIEW.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING A SAFE PLACE TO WORK AND MEETING THE REQUIREMENTS OF ALL APPLICABLE JURISDICTIONS. EXECUTE WORK TO ENSURE THE SAFETY OF PERSONS AND ADJACENT PROPERTY AGAINST DAMAGE BY FALLING DEBRIS AND OTHER HAZARDS IN CONNECTION WITH THIS WORK.

DESIGN CRITERIA

APPLICABLE CODE: 2019 CALIFORNIA BUILDING CODE WITH CITY OF LOS ANGELES AMENDMENTS

DC-2 PROJECT TYPE: NEW ADU

TYPE OF CONSTRUCTION: LIGHT-FRAMED WOOD CONSTRUCTION ON SHALLOW FOUNDATIONS

FOUNDATION DESIGNS ARE IN ACCORDANCE WITH THE MINIMUM DESIGN RECOMMENDATIONS FOUND IN CHAPTER 18 OF THE CALIFORNIA BUILDING CODE.

ALLOWABLE NET SOIL PRESSURE = 1500 PSF

ADU DESIGNED FOR LEVEL GRADE. CITY OF FRESNO TO APPROVE ADU LOCATION. CONTRACTOR TO VERIFY CONSTRUCTION WILL NOT UNDERMINE OR SURCHARGE ADJACENT

THE STRUCTURAL SCOPE INVOLVES THE CONSTRUCTION OF A NEW 1-STORY ADU.

**GRAVITY LOADS:** 

DEAD LOADS

PROPERTIES.

ROOF = 21 PSF SOLAR PANELS = 6 PSF

LIVE LOADS

ROOF = 20 PSF (REDUCIBLE) FLOORS = 40 PSF

THE STRUCTURE HAS BEEN EVALUATED IN ACCORDANCE WITH THE CALIFORNIA BUILDING CODE. THE FOLLOWING VALUES HAVE BEEN USED FOR THE DESIGN OF THE LATERAL FORCE RESISTING SYSTEM. SEISMIC DESIGN CATEGORY, SITE CLASS AND ALL SPECTRAL ACCELERATIONS

SHOULD BE REVIEWED FOR SITE SPECIFIC VALUES.

SITE CLASS = D (DEFAULT) ANALYSIS PROCEDURE = EQUIVALENT LATERAL FORCE

RHO = 1.3

= 0.266

= 0.595

= 1.0 FOR OCCUPANCY CATEGORY (II) STRUCTURE: ADU

LFRS = LIGHT-FRAMED WOOD SHEAR WALLS OVERSTRENGTH = 3.0 Cs = 0.091

DC-8 WIND DESIGN:

> BASIC WIND SPEED, V = 94MPH (3 SECOND GUST) EXPOSURE CATEGORY = B GUST EFFECT FACTOR = 0.85 Kd = 0.85Kz = 0.66Kzt = 1.0ENCLOSURE CLASSIFICATION = ENCLOSED

INTERNAL PRESSURE COEFFICIENT GCpi = ±0.18

	STRUCTURAL DRAWING LIST			
Sheet Number	Sheet Name			
SO SERIES: SHEET LIST, GENE	ERAL NOTES, TYPICAL DETAILS			
S.000	GENERAL NOTES & SHEET LIST			
S.010	TYPICAL CONCRETE DETAILS			
S.020	TYPICAL WOOD DETAILS - GENERAL AND STUD WALLS			
S.021	TYPICAL WOOD DETAILS - SHEAR WALLS			
S.022	TYPICAL WOOD DETAILS - SHEAR WALL AND ROOF CONNECTIONS			
S.023	TYPICAL WOOD DETAILS - DIAPHRAGMS			
S1 SERIES: FOUNDATION AND	L D FRAMING PLANS			
S.100c	CRAFTSMAN FOUNDATION AND FRAMING PLANS			
S.100g	GABLE (GABLE-STUCCO) FOUNDATION AND FRAMING PLANS			
S.100s	CONTEMPORARY FOUNDATION AND FRAMING PLANS			
S.110c	CRAFTSMAN CEILING FRAMING PLAN			
S.110g	GABLE (GABLE-STUCCO) CEILING FRAMING PLAN			
S.110s	CONTEMPORARY CEILING FRAMING PLAN			
S2 SERIES: BUILDING SECTIO	L NS AND ELEVATIONS			
5.200c CRAFTSMAN ELEVATIONS SECTIONS				

GABLE (GABLE-STUCCO) ELEVATIONS SECTIONS

CONTEMPORARY ELEVATIONS SECTIONS

AARON NEUBERT ARCHITECTS

ADU PROGRAM

ARCHITECT

CITY OF FRESNO PLANNING AND DEVELOPMENT DEPARTMENT 2600 FRESNO STREET, 3RD FLOOR

AARON NEUBERT CA# C-29005

AARON NEUBERT ARCHITECTS, INC. 2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900

STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC. 600 WILSHIRE BOLL EVARD SLITE 760 LOS ANGELES, CALIFORNIA 90017

PLEASANTON, CALIFORNIA 94566

P. 424.414.0997

MEP ENGINEER:

INNODEZ DESIGN AND ENGINEERING 726 FOXBROUGH PLACE

2 REVISION #2 06.03.22 PLAN CHECK CORRECTIONS

1 REVISION #1 04.01.22 PLAN CHECK CORRECTIONS



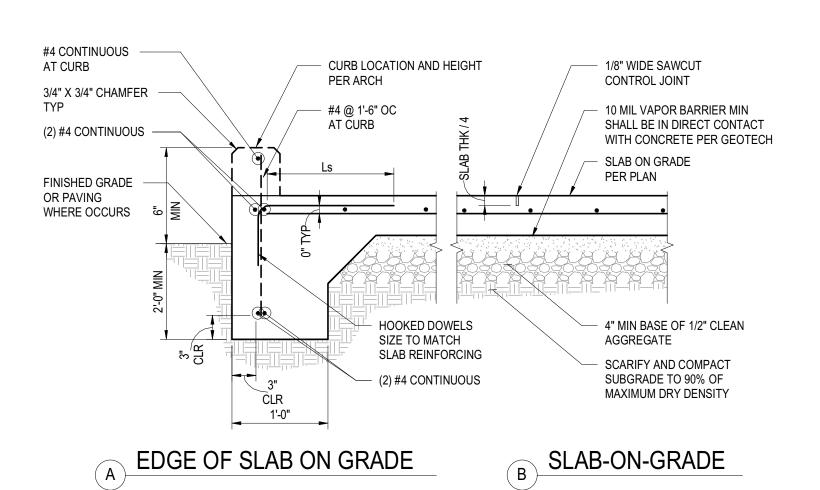
ADU PROGRAM CITY OF FRESNO

DRAWING TITLE:

**GENERAL NOTES & SHEET LIST** 

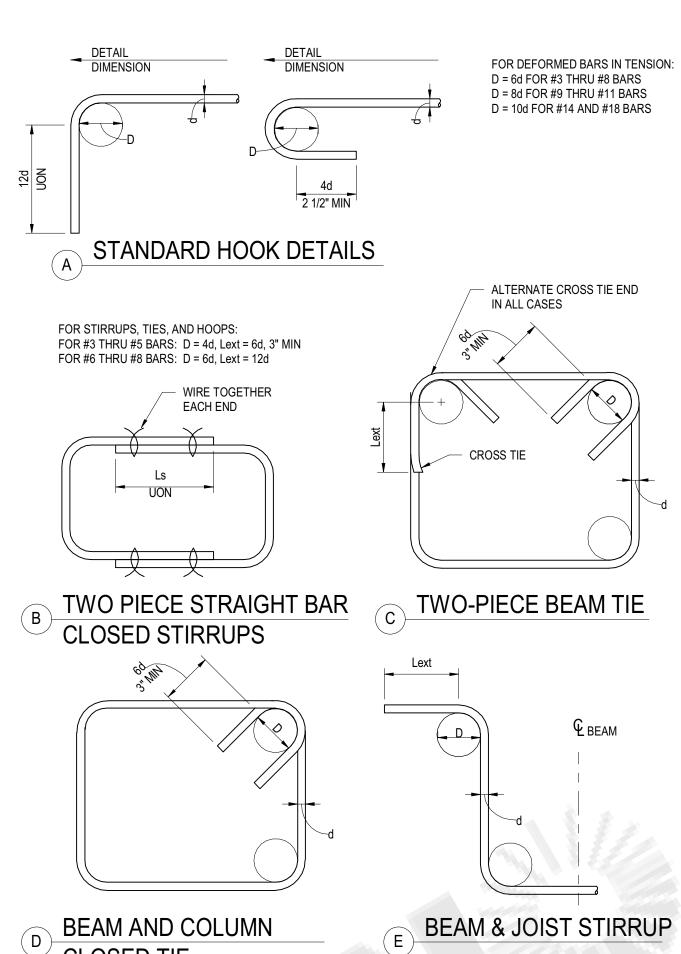
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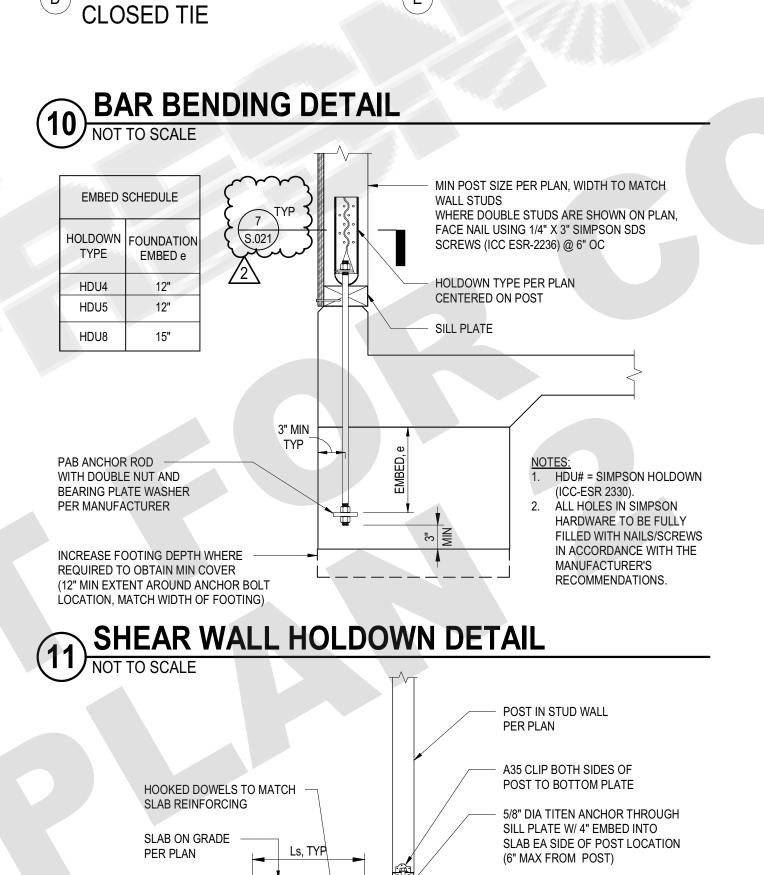
DRAWN BY



SLAB ON GRADE

NOT TO SCALE





W

\*FOOTINGS SHALL

OF 12" INTO

EXTEND A MINIMUM

UNDISTURBED SOIL

8 ISOLATED POST FOOTING
NOT TO SCALE



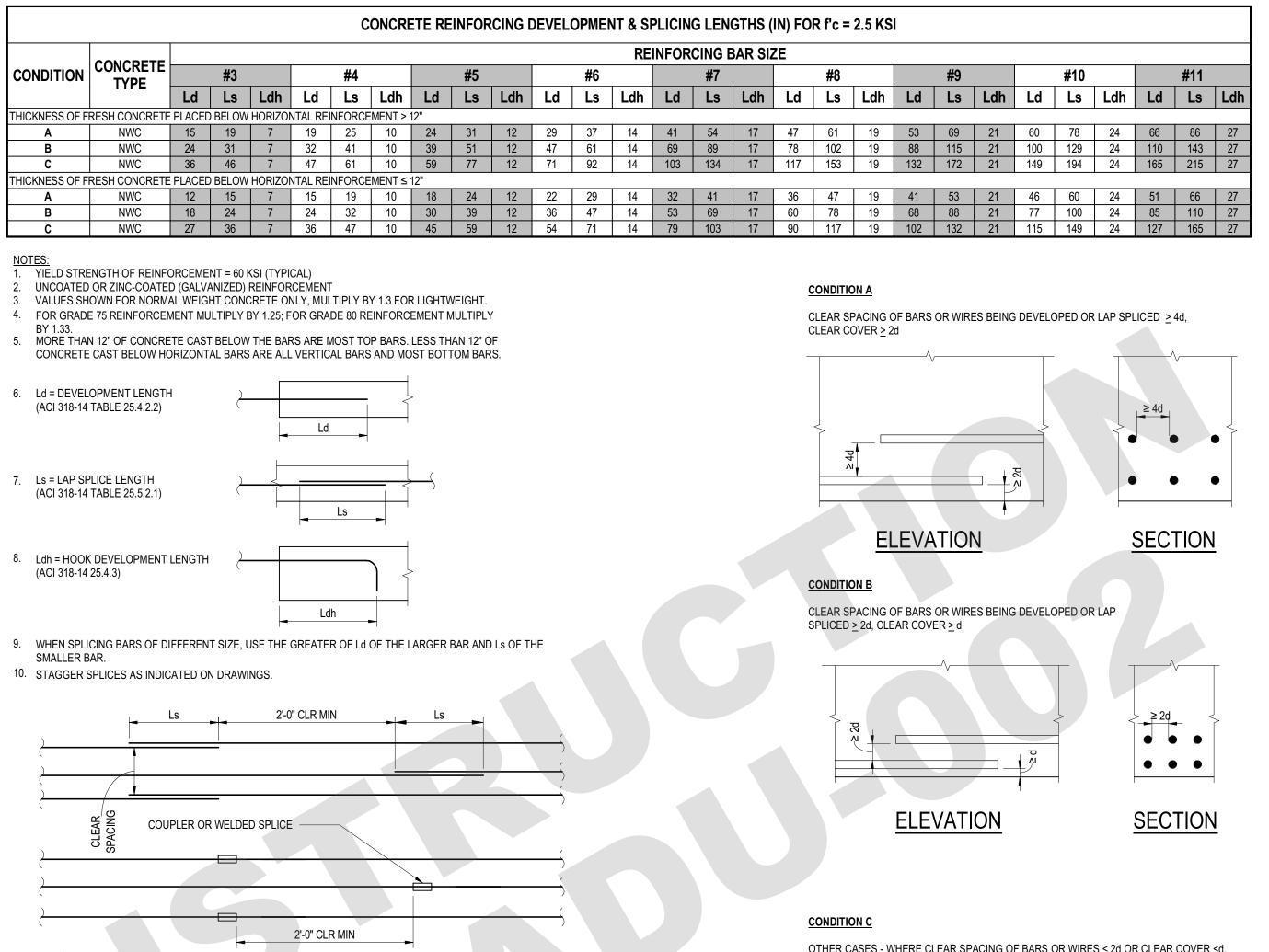
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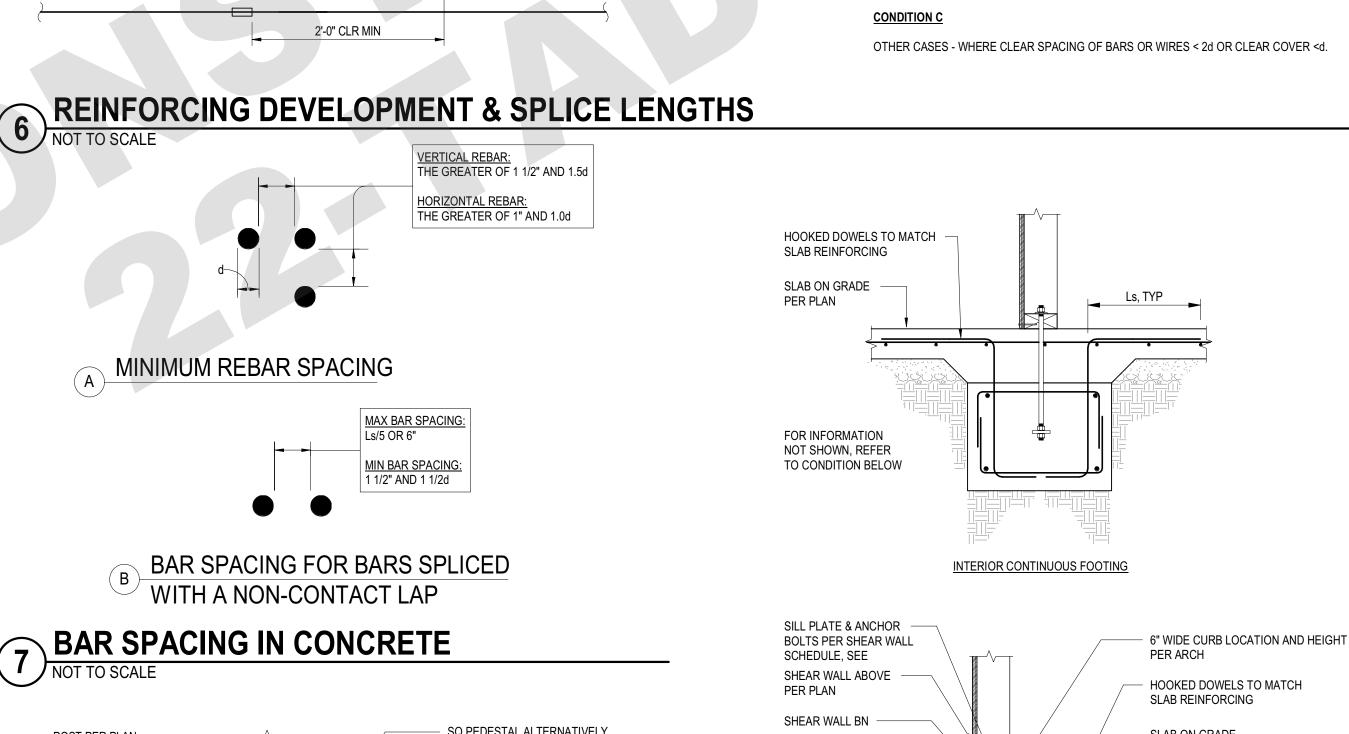
CONTINUOUS

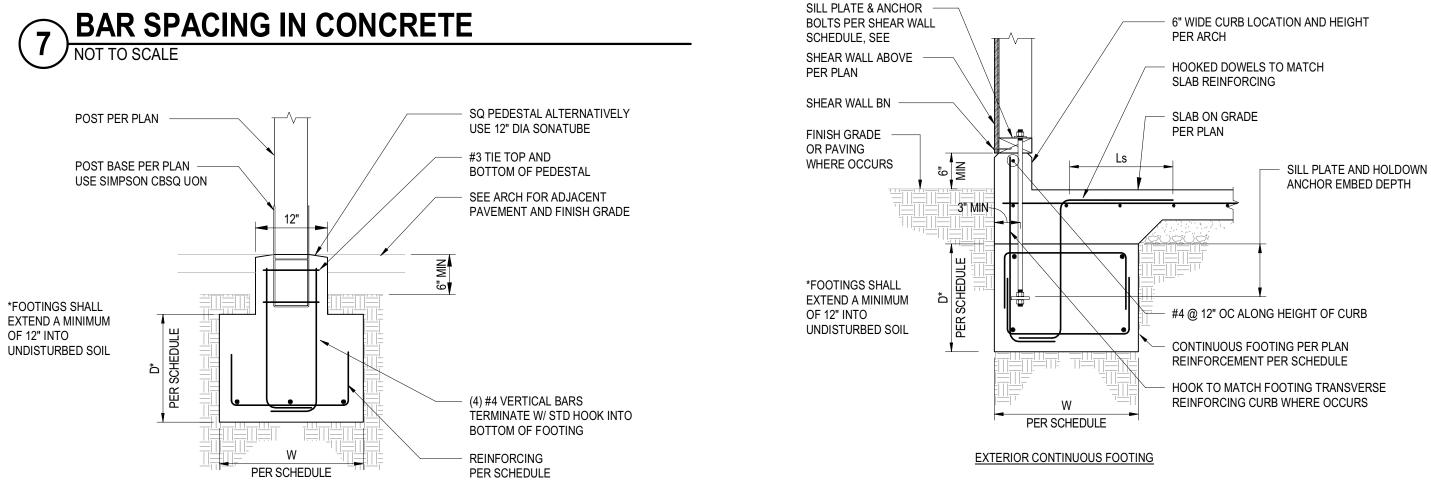
SCHEDULE

FOUNDATION PER PLAN

REINFORCING PER











OWNER: CITY OF FRESNO PLANNING AND DEVELOPMENT DEPARTMENT 2600 FRESNO STREET, 3RD FLOOR FRESNO, CA 93721 ARCHITECT:

AARON NEUBERT ARCHITECTS, INC. 2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900 AARON NEUBERT CA# C-29005

STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC. 600 WILSHIRE BOULEVARD, SUITE 760 LOS ANGELES, CALIFORNIA 90017 P. 213.627.6687

MEP ENGINEER:

INNODEZ DESIGN AND ENGINEERING 726 FOXBROUGH PLACE PLEASANTON, CALIFORNIA 94566 P. 424.414.0997

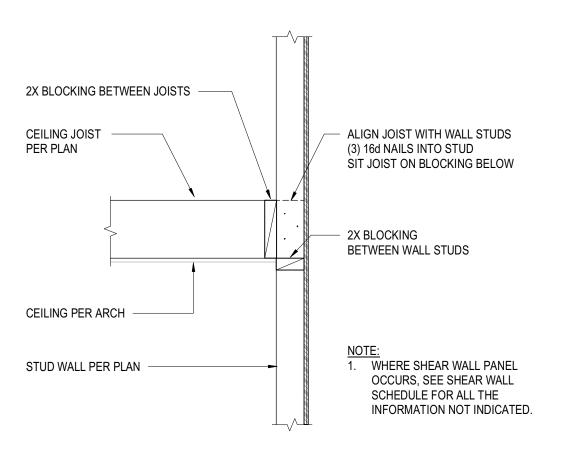
REVISION: 2 REVISION #2 06.03.22 PLAN CHECK CORRECTIONS 1 REVISION #1 04.01.22 PLAN CHECK CORRECTIONS

ADU PROGRAM CITY OF FRESNO

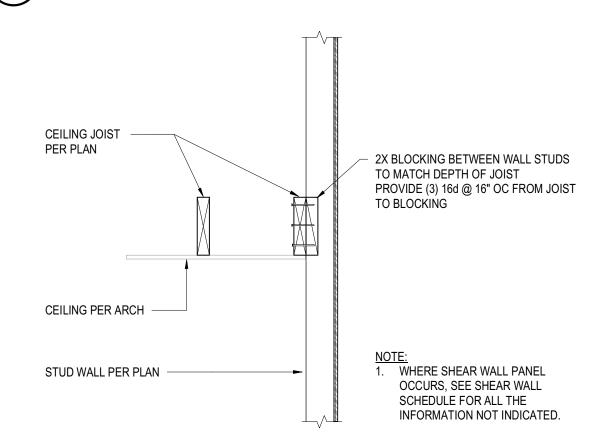
DRAWING TITLE:

ADU 02 TYPICAL CONCRETE DETAILS

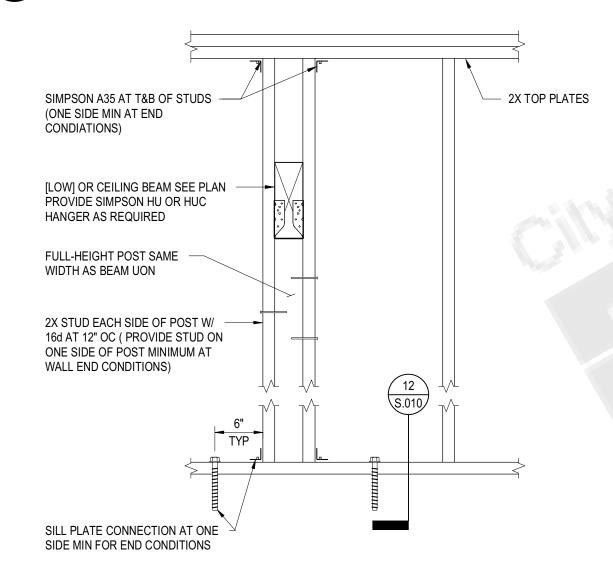
DATE: APRIL 1, 2022 SCALE: AS NOTED DRAWN BY:

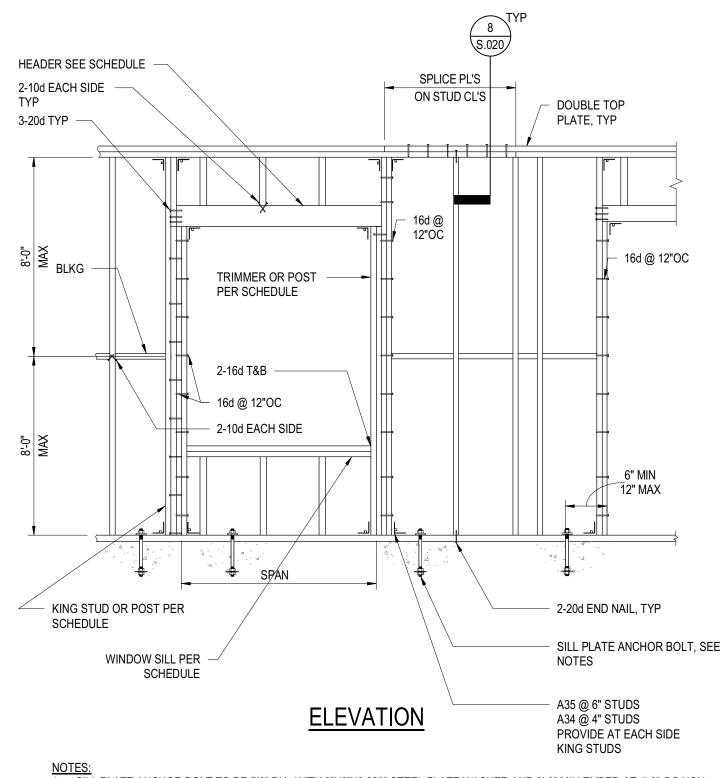


# CEILING JOIST PERPENDICULAR TO WALL NOT TO SCALE



# CEILING JOIST PARALLEL TO WALL NOT TO SCALE





NOTES:

1. SILL PLATE ANCHOR BOLT TO BE 5/8" DIA. WITH 3"X3"X0.229" STEEL PLATE WASHER AND 0'-8" MIN EMBED AT 4'-0" OC UON. SILL PLATE ANCHOR BOLTS TO BE 6" MIN./12" MAX. FROM END OF SILL PLATE. MINIMUM (2) BOLTS PER PLATE. NOTCHES TO SILL PER DETAIL

4. AT NON BEARING WALLS, ACCEPTABLE TO REPLACE ANCHOR BOLTS WITH SIMPSON PDPW-300 @ 24"OC (ICC-ESR 2138). POWDER DRIVEN FASTENERS SHALL NOT BE USED IN STEM WALLS LESS THAN 5 1/2" WIDE OR GREATER THAN 5 /2" HIGH. STUD SIZE AND SPACING PER STUD WALL SCHEDULE (2X4 @ 16"oc OR 2X6 @ 16"OC MINIMUM)

SILL PLATE ANCHOR BOLTS SHALL BE LOCATED IN THE MIDDLE THIRD WIDTH OF THE SILL PLATE. 7. IF FINGER JOINTED STUDS ARE USED, STUDS MUST BE GRADE STAMPED BY AN APPROVED ICC INSPECTION AGENCY AND CLEARLY SPECIFIED ON PLANS.

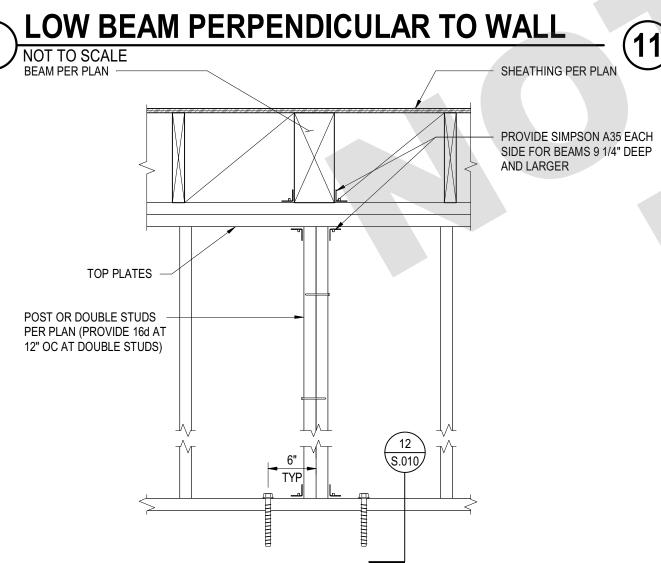
8. SILL PLATES ON MASONRY OR CONCRETE SHALL BE PRESSURE TREATED AND 3X MIN.

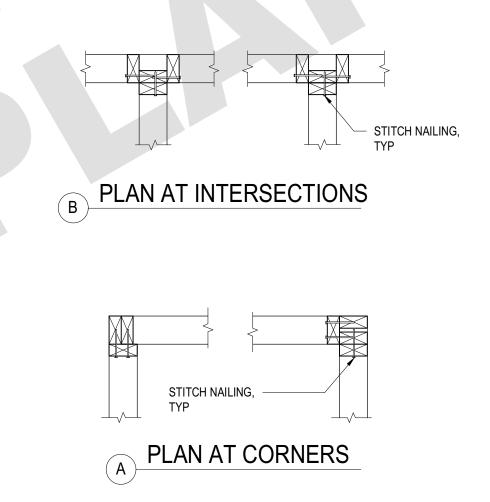
WALL STUD SCHEDULE						
LEVEL	STUD DEPTH	STUD REQUIREMENT				
ALL FLOORS	5 1/2"	2X6 @ 16"OC				

KING/TRIMMER SCHEDULE UON				WINDOW SIL	L SCHEDULE
KING	TRIMMER	SPAN		SILL MEMBER	SILL SPAN
2X OR POST	2X	<= 4'-0"		2X	<=4'-0"
(2)-2X OR POST	(2)-2X	<= 8'-0"		(2)-2X	<=8'-0"
(3)-2X	(3)-2X OR POST	> 8'-0"		4X	<=12'-0"
			J	6X	<=15'-0"

HEADER SCHEDULE (UON ON DRAWINGS)							
MAX	LOAD BEARING HEADER NON-LOAD BEARING HEADER					ARING HEADER	
OPENING SIZE	HEADER SIZE	AT FLOOR	HEADER SIZ	ZE AT ROOF	HEADER SZ. A	T FLR. AND RF.	
	4" WALL	6" WALL	4" WALL	6" WALL	4" WALL	6" WALL	
4'-0"	4X8	6X6	4X6	6X6	4X4	4X6 FLAT	
6'-0"	4X10	6X8	4X8	6X6	4X4	6X6	
8'-0"	3 1/2 X 11 7/8 LVL	6X10	4X10	6X8	4X6	6X6	

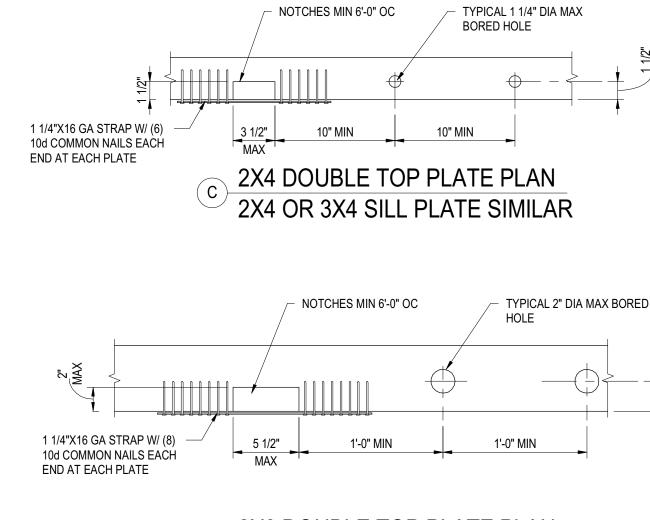
# STUD WALL FRAMING NOT TO SCALE



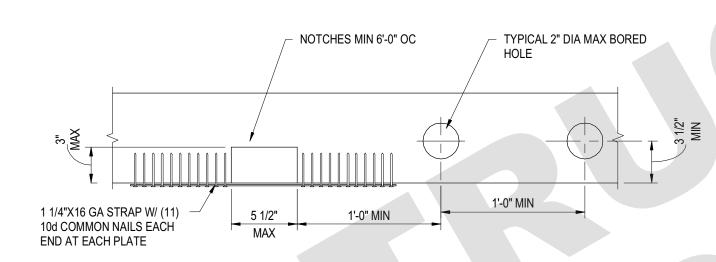


FLUSH BEAM PERPENDICULAR TO WALL
NOT TO SCALE

STUD WALL CORNERS AND INTERSECTIONS
NOT TO SCALE

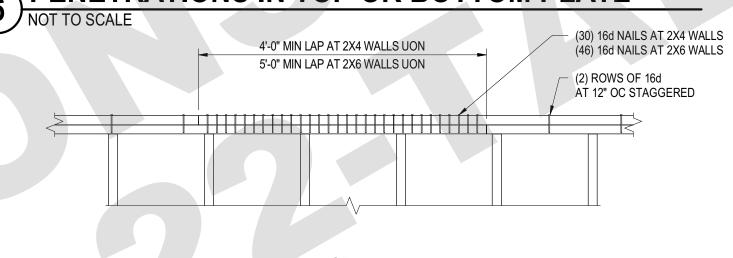


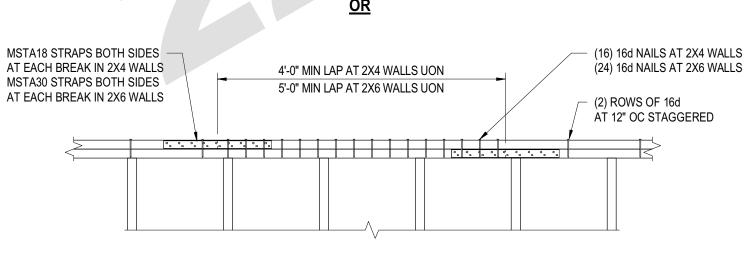
#### 2X6 DOUBLE TOP PLATE PLAN 2X6 OR 3X6 SILL PLATE SIMILAR



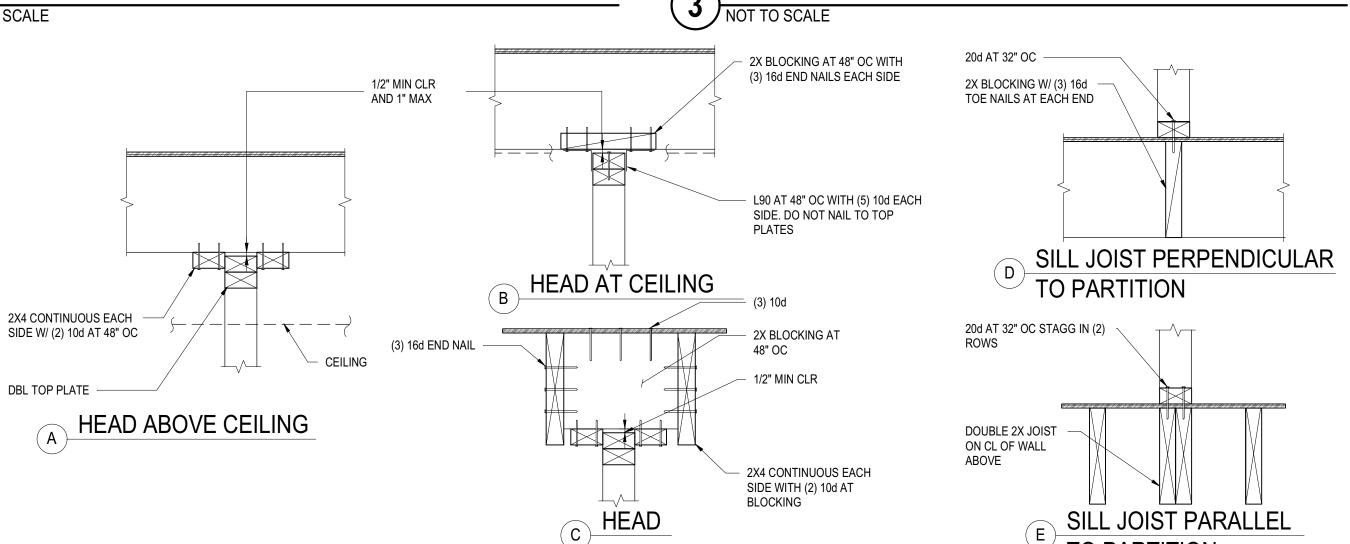
### 2X8 DOUBLE TOP PLATE PLAN 2X8 OR 3X8 SILL PLATE SIMILAR

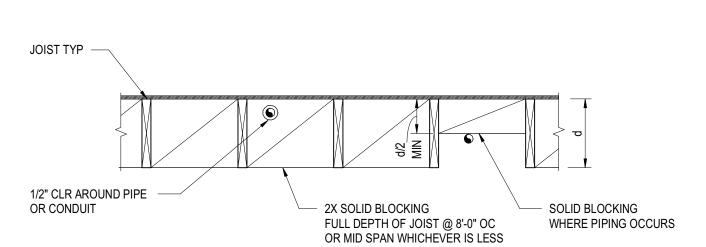
# 6 PENETRATIONS IN TOP OR BOTTOM PLATE NOT TO SCALE



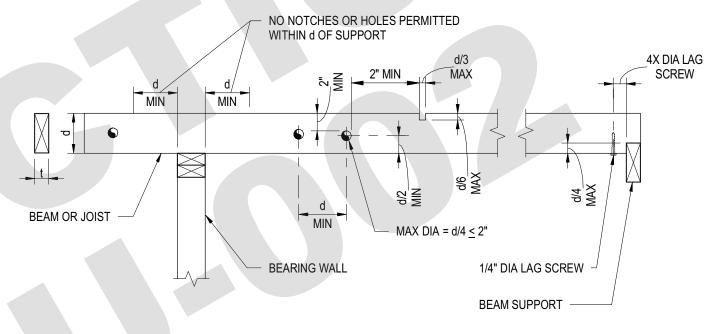


# 7 TOP PLATE SPLICE NOT TO SCALE



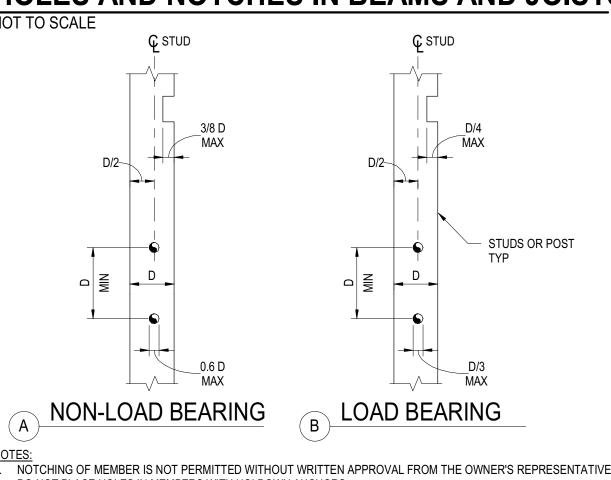


## WOOD JOIST BLOCKING



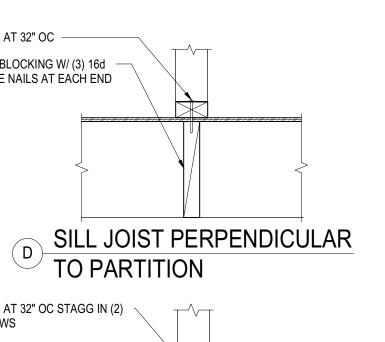
1. HOLES & NOTCHES NOT PERMITTED FOR d=5 1/2" OR LESS. NOTCHES NOT PERMITTED WITHIN MIDDLE THIRD OF SPAN. 3. NOTCHES NOT PERMITTED IN BOTTOM OF MEMBER UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS OR WRITTEN APPROVAL IS OBTAINED FROM THE OWNER'S

# HOLES AND NOTCHES IN BEAMS AND JOISTS NOT TO SCALE



DO NOT PLACE HOLES IN MEMBERS WITH HOLDOWN ANCHORS. BORED HOLES SHALL NOT BE LOCATED AT THE SAME SECTION OF STUD AS A NOTCH.

## **HOLES AND NOTCHES IN STUDS OR POSTS**



DRAWING TITLE: ADU 02 TYPICAL WOOD DETAILS -GENERAL AND STUD WALLS

2 REVISION #2 06.03.22 PLAN CHECK CORRECTIONS

1 REVISION #1 04.01.22 PLAN CHECK CORRECTIONS

**AARON NEUBERT ARCHITECTS** 

ADU PROGRAM

CITY OF FRESNO

FRESNO, CA 93721

2600 FRESNO STREET, 3RD FLOOR

2814 ROWENA AVENUE, SUITE ONE

LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900 AARON NEUBERT CA# C-29005

PLANNING AND DEVELOPMENT DEPARTMENT

NOUS ENGINEERING, INC.

600 WILSHIRE BOULEVARD, SUITE 760 LOS ANGELES, CALIFORNIA 90017

P. 213.627.6687

726 FOXBROUGH PLACE

PLEASANTON, CALIFORNIA 94566 P. 424.414.0997

AARON NEUBERT ARCHITECTS, INC.

INNODEZ DESIGN AND ENGINEERING

OWNER:

ARCHITECT:

STRUCTURAL ENGINEER:

MEP ENGINEER:

REVISION:

Project No. 2104

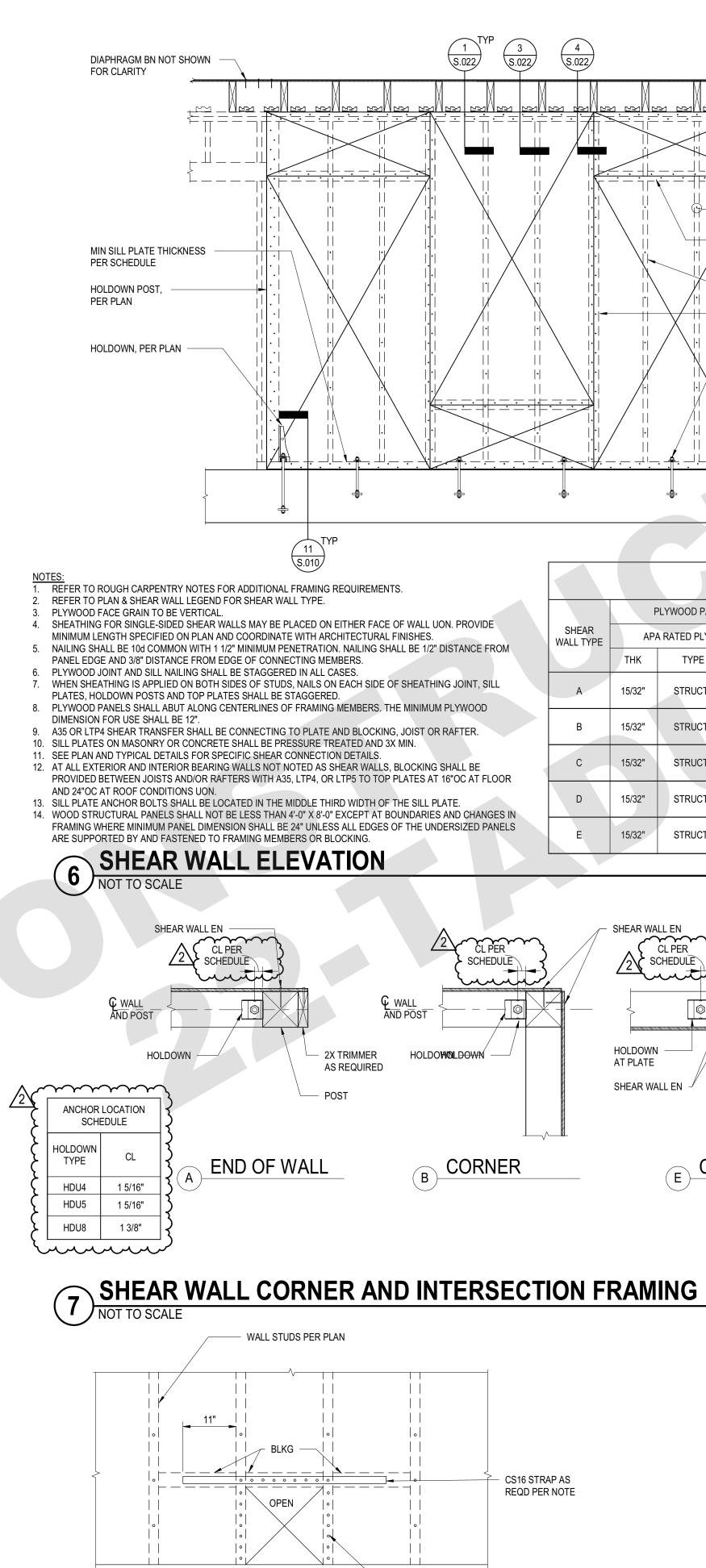
CITY OF FRESNO

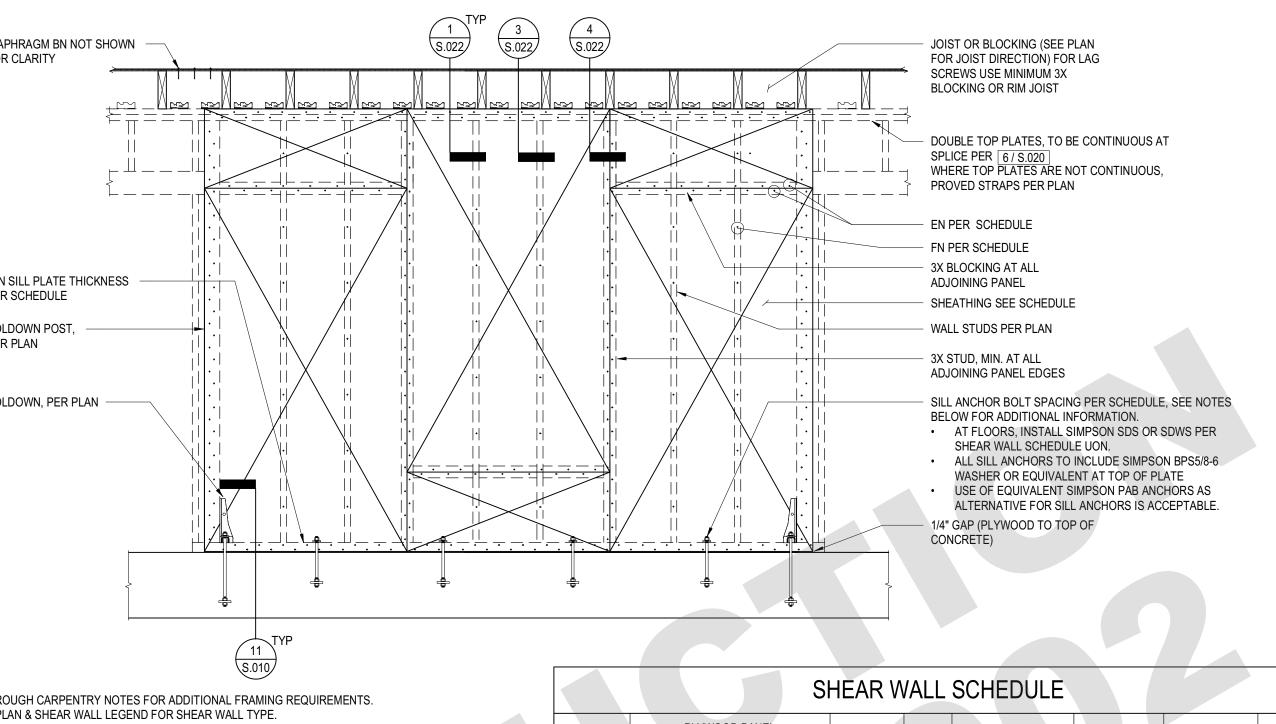
CALIFORNIA

ADU PROGRAM

DATE: APRIL 1, 2022 SCALE: AS NOTED DRAWN BY:

8 JOIST AT STUD WALL (NON-BEARING)
NOT TO SCALE



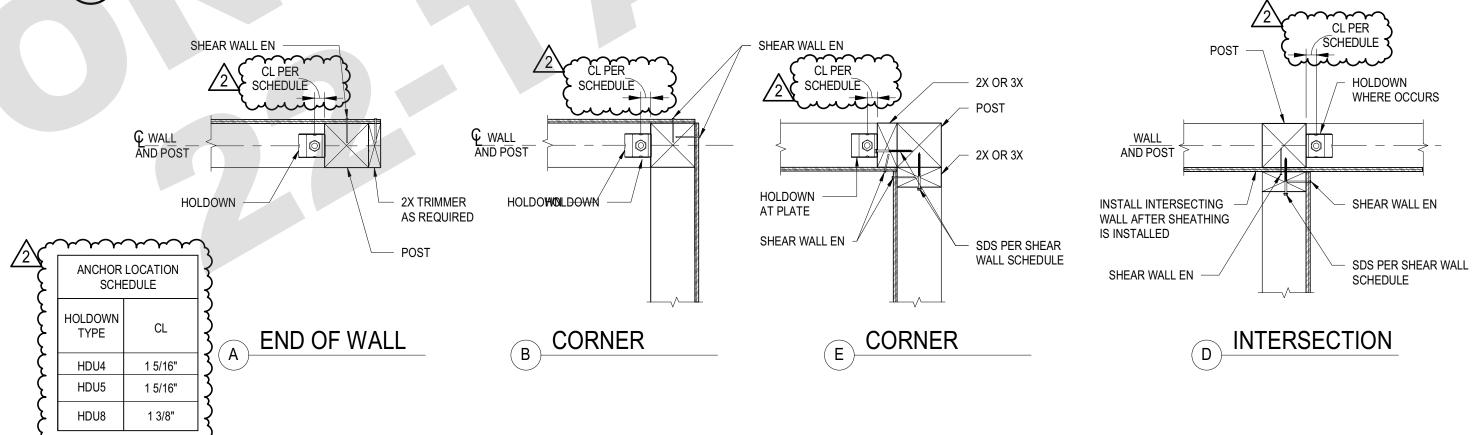


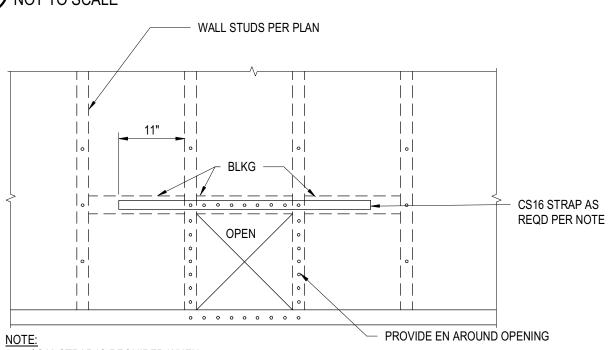
PLYWOOD PANEL SILL PLATE 1/4"X6" SIMPSON ANCHOR TO CONCRETE FTG

SDS (ICC

ESR-2236) OR 5"
SIMPSON SDWS

SIZE & SPACING SDS (ICC SHEAR SHEAR NAILING SIZE APA RATED PLYWOOD CAPACITY WALL TYPE (BN, EN, FN) TYPE THK SIZE & SPACING (UES ER-192) ONE SIDE 10d@ 5/8" DIA X AT 12" OC 15/32" STRUCT I 6",6",12" 8" EMBED @ 32"OC ONE SIDE ONE SIDE 10d@ 5/8" DIA X AT 10" OC 15/32" STRUCT I 4",4",12" 8" EMBED @ 32"OC ONE SIDE ONE SIDE 10d@ AT 8" OC 5/8" DIA X 15/32" STRUCTI AT 6" OC 3",3",12" 8" EMBED @ 24"OC ONE SIDE AT 6" OC 15/32" STRUCT I SIDE 2",2",12" 8" EMBED @ 24"OC ONE SIDE 10d@ 3",3",12" AT 8" OC 5/8" DIA X 15/32" STRUCT I 1330 SIDES 8" EMBED @ 12"OC TWO SIDES





1. CS16 STRAP IS REQUIRED WHEN:

- A. THE PENETRATION IS LARGER THEN 25% OF WALL LENGTH.
- B. THE PENETRATIONS ARE CLOSER THAN 32" OC. C. A SECOND HORIZONTAL STRAP IS REQUIRED AT THE BOTTOM OF OPENING WHEN BOTTOM OF OPENING IS NOT AT BOTTOM PLATE.
- 16X16 MAXIMUM OPENING SIZE. • BLOCKING AND STRAPS NOT REQUIRED WHEN PENETRATION IS LESS THAN OR EQUAL TO 6" AND SPACED AT 2 OR MORE STUD BAYS.
- 8 SHEAR WALL PENETRATION (16"X16")
  NOT TO SCALE



### ADU PROGRAM

OWNER:

CITY OF FRESNO PLANNING AND DEVELOPMENT DEPARTMENT 2600 FRESNO STREET, 3RD FLOOR

P. 424.414.0997

ARCHITECT:

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NOUS ENGINEERING, INC. 600 WILSHIRE BOULEVARD, SUITE 760 LOS ANGELES, CALIFORNIA 90017 P. 213.627.6687

MEP ENGINEER:

INNODEZ DESIGN AND ENGINEERING 726 FOXBROUGH PLACE PLEASANTON, CALIFORNIA 94566

REVISION: 2 REVISION #2 06.03.22 PLAN CHECK CORRECTIONS 1 REVISION #1 04.01.22 PLAN CHECK CORRECTIONS

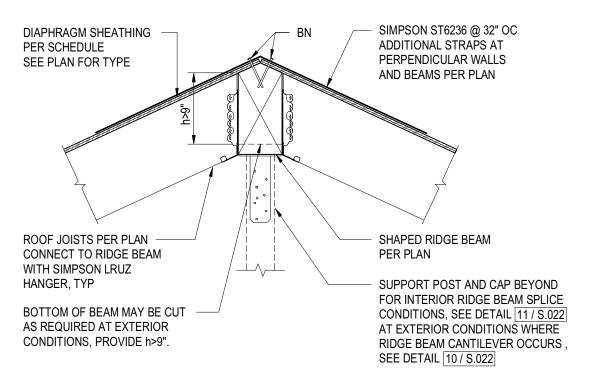
ADU PROGRAM CITY OF FRESNO

DRAWING TITLE:

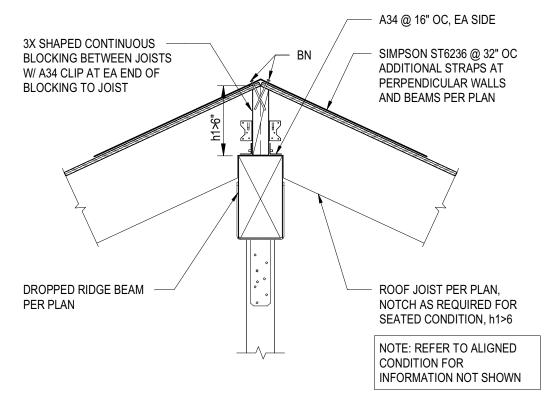
TYPICAL WOOD DETAILS - SHEAR

DATE: APRIL 1, 2022 SCALE: AS NOTED

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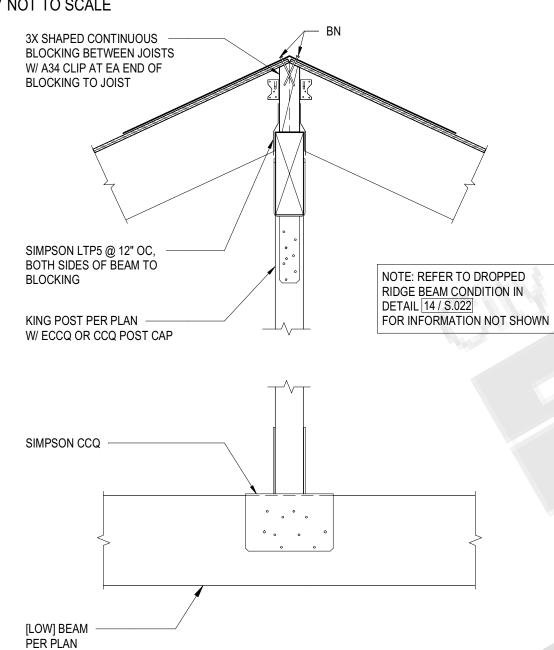


#### **ALIGNED RIDGE BEAM**

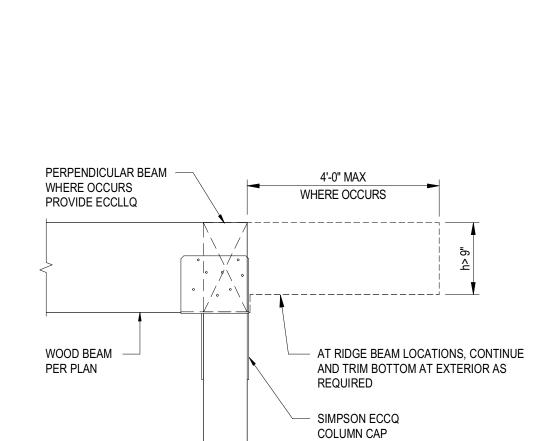


### DROPPED RIDGE BEAM

## **ROOF RAFTERS TO RIDGE BEAM**



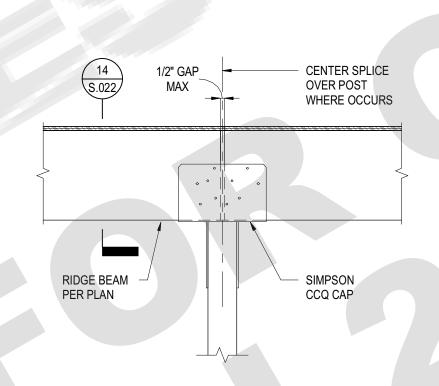
# RIDGE BEAM TO KING POST NOT TO SCALE



WOOD POST

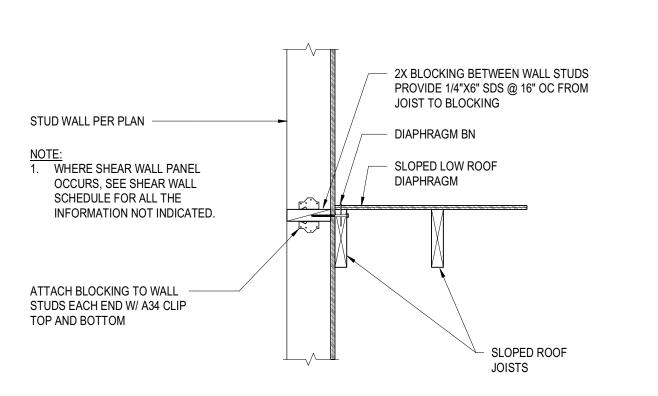
PER PLAN

# WOOD POST TO WOOD BEAM (CORNER/END) NOT TO SCALE

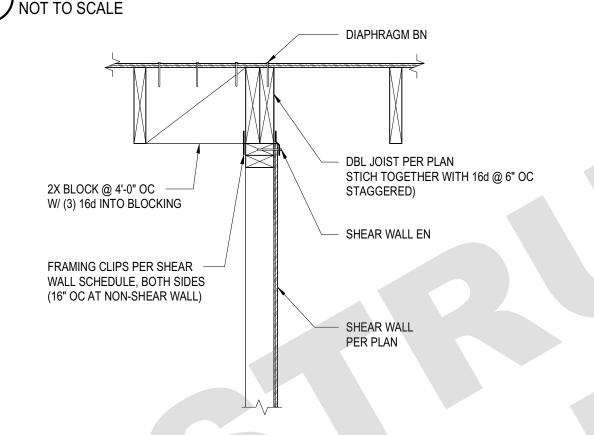


POST TO RIDGE BEAM

NOT TO SCALE

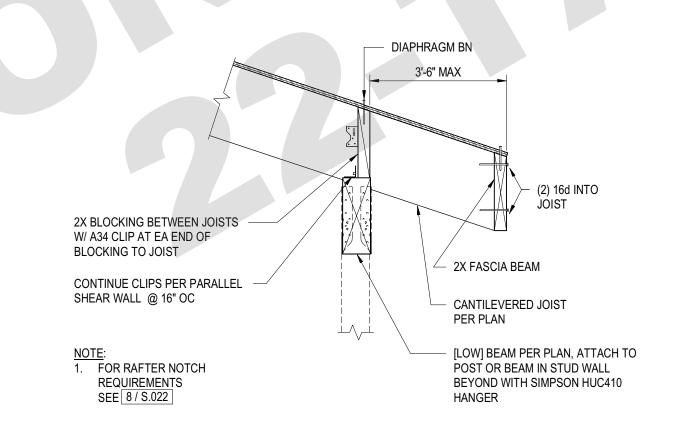


# 5 LOW ROOF AT EXTERIOR WALL NOT TO SCALE

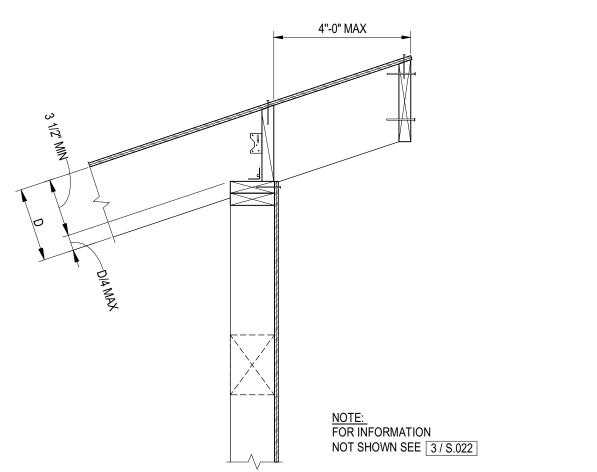


# INTERIOR ROOF SHEAR TRANSFER

6 (JOISTS PARALLEL)
NOT TO SCALE



# 7 JOIST AT [LOW] BEAM SUPPORT

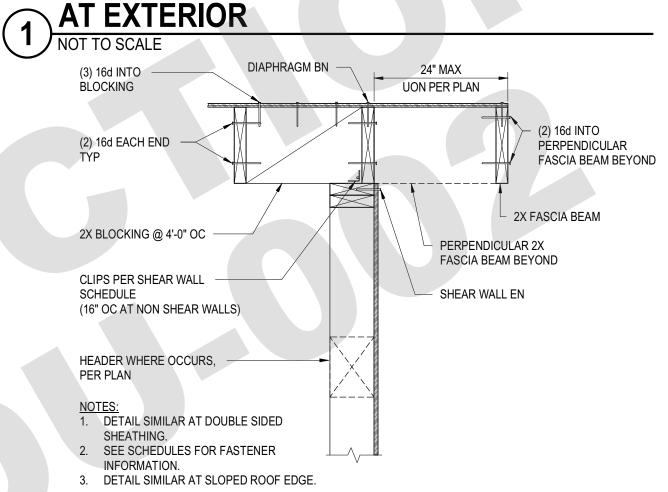


JOIST PERPENDICULAR TO SHEAR WALL 8 AT EXTERIOR (SHED)
NOT TO SCALE

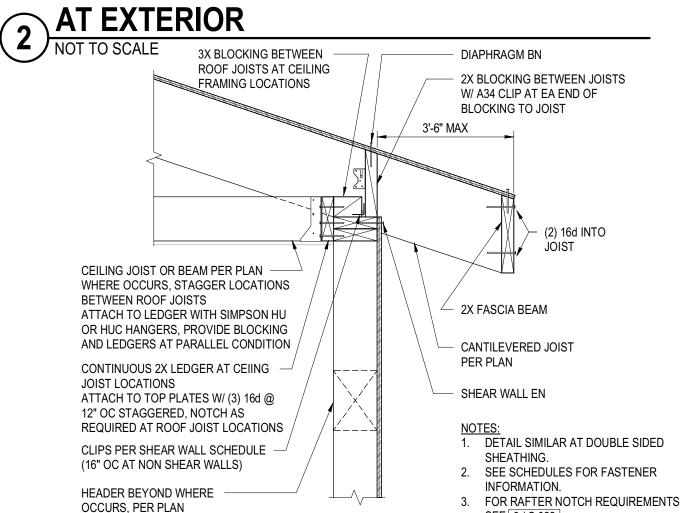
(2) 16d INTO JOIST 2X FASCIA BEAM 2X BLOCKING BETWEEN JOISTS W/ A34 CLIP AT EA END OF **BLOCKING TO JOIST** CANTILEVERED JOIST CLIPS PER SHEAR WALL PER PLAN SCHEDULE (16" OC AT NON SHEAR WALLS) - SHEAR WALL EN HEADER WHERE OCCURS, PER PLAN NOTES:
1. DETAIL SIMILAR AT DOUBLE SIDED SHEATHING. 2. SEE SCHEDULES FOR FASTENER INFORMATION.

DIAPHRAGM BN -

## JOIST PERPENDICULAR TO SHEAR WALL

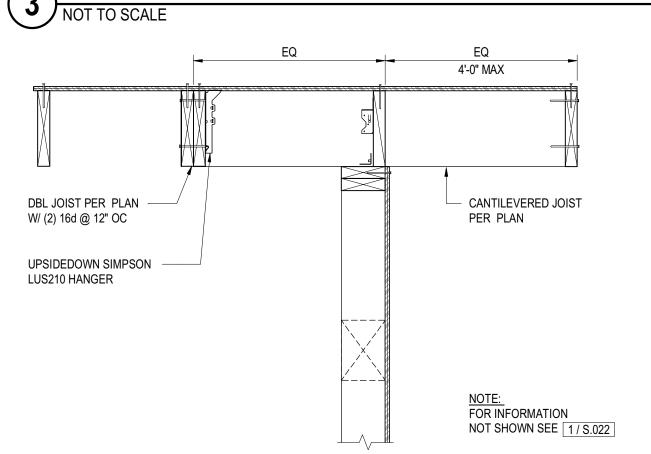


## JOIST PARALLEL TO SHEAR WALL



## JOIST PERPENDICULAR TO SHEAR WALL

3 AT EXTERIOR NOT TO SCALE



## JOIST PERPENDICULAR TO SHEAR WALL 4 AT EXTERIOR (CANTILEVER) NOT TO SCALE

**AARON NEUBERT ARCHITECTS** 

ADU PROGRAM

ARCHITECT:

CITY OF FRESNO PLANNING AND DEVELOPMENT DEPARTMENT 2600 FRESNO STREET, 3RD FLOOR FRESNO, CA 93721

AARON NEUBERT ARCHITECTS, INC. 2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900

AARON NEUBERT CA# C-29005

STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC. 600 WILSHIRE BOULEVARD, SUITE 760 LOS ANGELES, CALIFORNIA 90017 P. 213.627.6687

P. 424.414.0997

MEP ENGINEER:

INNODEZ DESIGN AND ENGINEERING 726 FOXBROUGH PLACE PLEASANTON, CALIFORNIA 94566

REVISION: 2 REVISION #2 06.03.22 PLAN CHECK CORRECTIONS 1 REVISION #1 04.01.22 PLAN CHECK CORRECTIONS

ADU PROGRAM

DRAWING TITLE:

CITY OF FRESNO

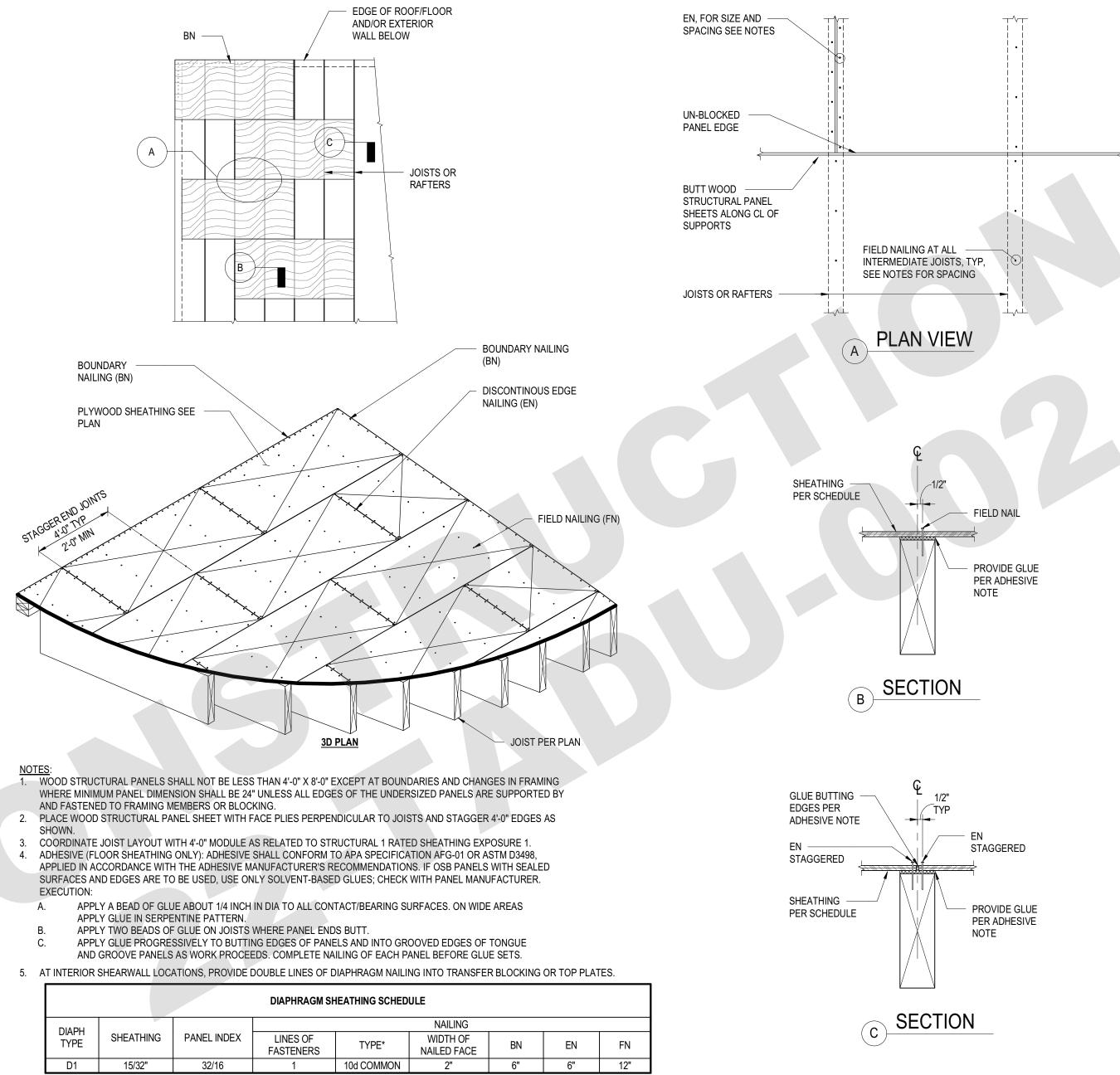
TYPICAL WOOD DETAILS - SHEAR

DATE: APRIL 1, 2022

WALL AND ROOF CONNECTIONS

SCALE: AS NOTED DRAWN BY:





7 UNBLOCKED DIAPHRAGM SHEATHING SCHEDULE
NOT TO SCALE

\* NAILING TO BE RING OR SPIRAL SHANK, FULL HEAD.



#### ADU PROGRAM

OWNER:

CITY OF FRESNO
PLANNING AND DEVELOPMENT DEPARTMENT
2600 FRESNO STREET, 3RD FLOOR
ERESNO CA 03731

ARCHITECT:

AARON NEUBERT ARCHITECTS, INC.
2814 ROWENA AVENUE, SUITE ONE
LOS ANGELES, CALIFORNIA 90039
P. 323.953.4700 F. 323.953.4900

AARON NEUBERT CA# C-29005

STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC.
600 WILSHIRE BOULEVARD, SUITE 760
LOS ANGELES, CALIFORNIA 90017
P. 213.627.6687

MEP ENGINEER:

INNODEZ DESIGN AND ENGINEERING
726 FOXBROUGH PLACE
PLEASANTON, CALIFORNIA 94566
P. 424.414.0997

REVISION: DATE: COMMENT:

2 REVISION #2 06.03.22 PLAN CHECK CORRECTIONS

1 REVISION #1 04.01.22 PLAN CHECK CORRECTIONS

SEAL:

C80463
EXP 03/31/2023

Project No. 2104
ADU PROGRAM
CITY OF FRESNO
CALIFORNIA

DRAWING TITLE:

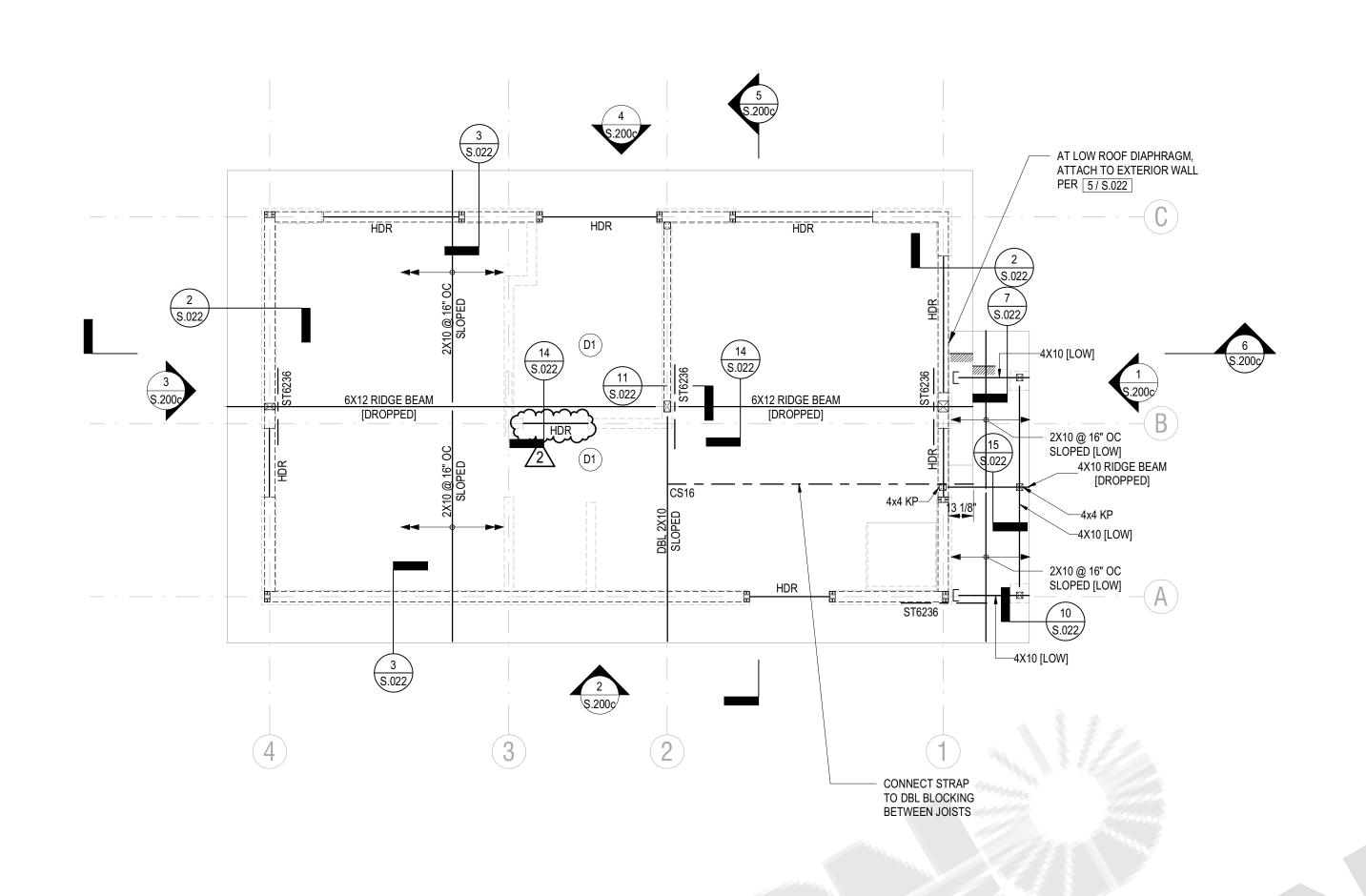
ADU 02 TYPICAL WOOD DETAILS -DIAPHRAGMS

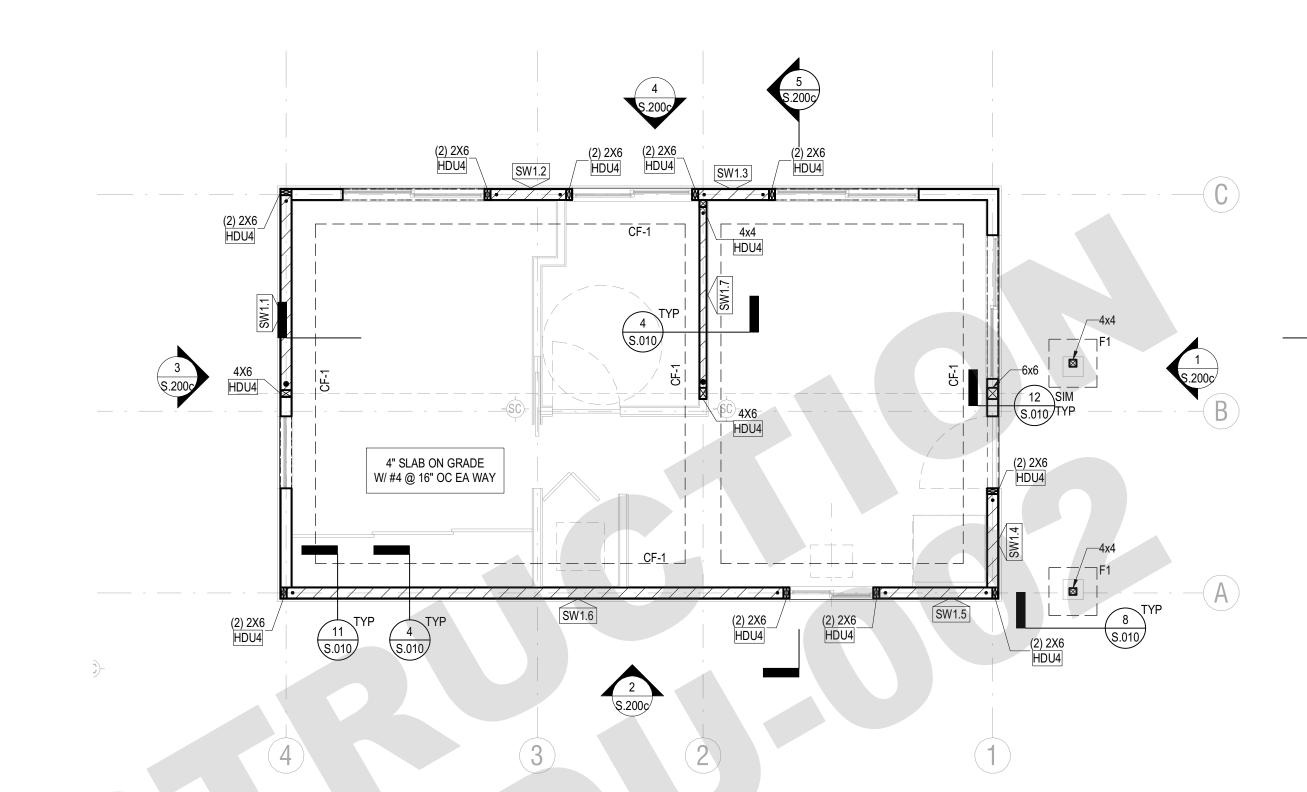
DATE: APRIL 1, 2022

SCALE: AS NOTED

DRAWN BY:

rt Architects, INC. 2021





- REFER TO SO SERIES SHEETS FOR GENERAL NOTES AND TYPICAL DETAILS. 2. DEPRESSIONS, CURBS, AND OPENINGS SHOWN ON THIS PLAN ARE NOT COMPLETE AS TO NUMBER, SIZE, AND LOCATION. FOR COMPLETE INFORMATION, REFER TO DRAWINGS OTHER THAN
- STRUCTURAL. 3. GENERAL CONTRACTOR SHALL COORDINATE THE LOCATION OF EQUIPMENT SUPPORT BEAMS AND BEAMS AROUND FLOOR OPENINGS WITH ALL PROJECT REQUIREMENTS
- 4. WHERE DROPPED CEILINGS OCCUR, CONNECT TO ADJACENT STUD WALLS PER DETAIL 13 / S.020 AND 14 / S.020

REFER TO 7 / S.023

## FRAMING PLAN LEGEND

INDICATES WALL BELOW INDICATES DIAPHRAGM TYPE, FOR ADDITIONAL INFORMATION

INDICATES DROPPED HEADER FOR SIZE AND SUPPORTS SEE DETAIL 11/S.020, UON ON PLAN

WHERE HEADER INTERUPTS TOP PLATES OF STUD WALL, PROVIDE MIN CS14 STRAP FROM HEADER TO ADJACENT WALLS, DEVELOPMENT LENGTH AND FASTENING PER MANUFACTURER, UON ON PLAN SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL ROUGH OPENING DIMENSIONS, ALLOW FOR TRIMMERS AND JAMB STUDS ADJACENT TO HOLDOWN POST LOCATIONS

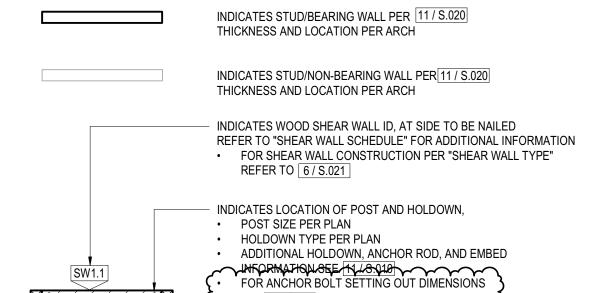
INDICATES WOOD BEAM WITH SIMPSON HANGER CONNECTION TO STUD WALL PER 7 / S.022

### **FOUNDATION PLAN NOTES**

- 1. TOP OF FOOTING GRADE BEAM ELEVATION TO BE 1'-0" BELOW TOP OF SLAB OR FINISHED GRADE, UON. 2. REFER TO SO SERIES SHEETS FOR GENERAL NOTES AND TYPICAL DETAILS.
- 3. ALL SETTING OUT DIMENSIONS ARE TO BE READ IN CONJUNCTION AND CONFIRMED WITH ARCHITECTURAL
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10. PROVIDE A 6" CURB AT EXTERIOR TIMBER WALLS. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS.

#### **FOUNDATION PLAN LEGEND**



INDICATES WOOD SHEAR WALL EXTENTS, ABOVE LENGTH SHOWN IN SCHEDULE INDICATES APPROXIMATE LENGTH OF SHEAR WALL, ACTUAL LENGTH MAY DEVIATE +/- 6".

	CO	NTINUOUS	S FOOTING	SCHEDULE	
TYPE MARK	WIDTH, W	DEPTH, D	TOP BARS	BOTTOM BARS	TIES

CF-1 1' - 6" 1'-6" (2) #5 (2) #5 #4 @ 12" OC

ISOLATED FOOTING SCHEDULE						
TYPE MARK	WIDTH, W	LENGTH, B	DEPTH, D	TOP BARS	BOTTOM BARS	
F1	2' - 0"	2'-0"	1'-6"	-	(3) #5 EA WAY	

	WOOD SHEAR WALL SCHEDULE							
WALL ID	SHEAR WALL TYPE	LENGTH	WIDTH					
SW1.1	A	8'-6"	5 1/2"					
SW1.2	В	3'-6"	5 1/2"					
SW1.3	В	3'-6"	5 1/2"					
SW1.4	A	4'-0"	5 1/2"					
SW1.5	A	5'-0"	5 1/2"					
SW1.6	A	21'-0"	5 1/2"					
SW1.7	A	8'-6"	3 1/2"					

AARON NEUBERT ARCHITECTS

ADU PROGRAM

CITY OF FRESNO PLANNING AND DEVELOPMENT DEPARTMENT 2600 FRESNO STREET, 3RD FLOOR

AARON NEUBERT ARCHITECTS, INC. 2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900

AARON NEUBERT CA# C-29005

STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC. 600 WILSHIRE BOULEVARD, SUITE 760 LOS ANGELES, CALIFORNIA 90017

MEP ENGINEER:

REVISION: DATE:

ADU PROGRAM

FRAMING PLANS

DATE: APRIL 1, 2022

SCALE: AS NOTED

CITY OF FRESNO

DRAWING TITLE:

2 REVISION #2 06.03.22 PLAN CHECK CORRECTIONS

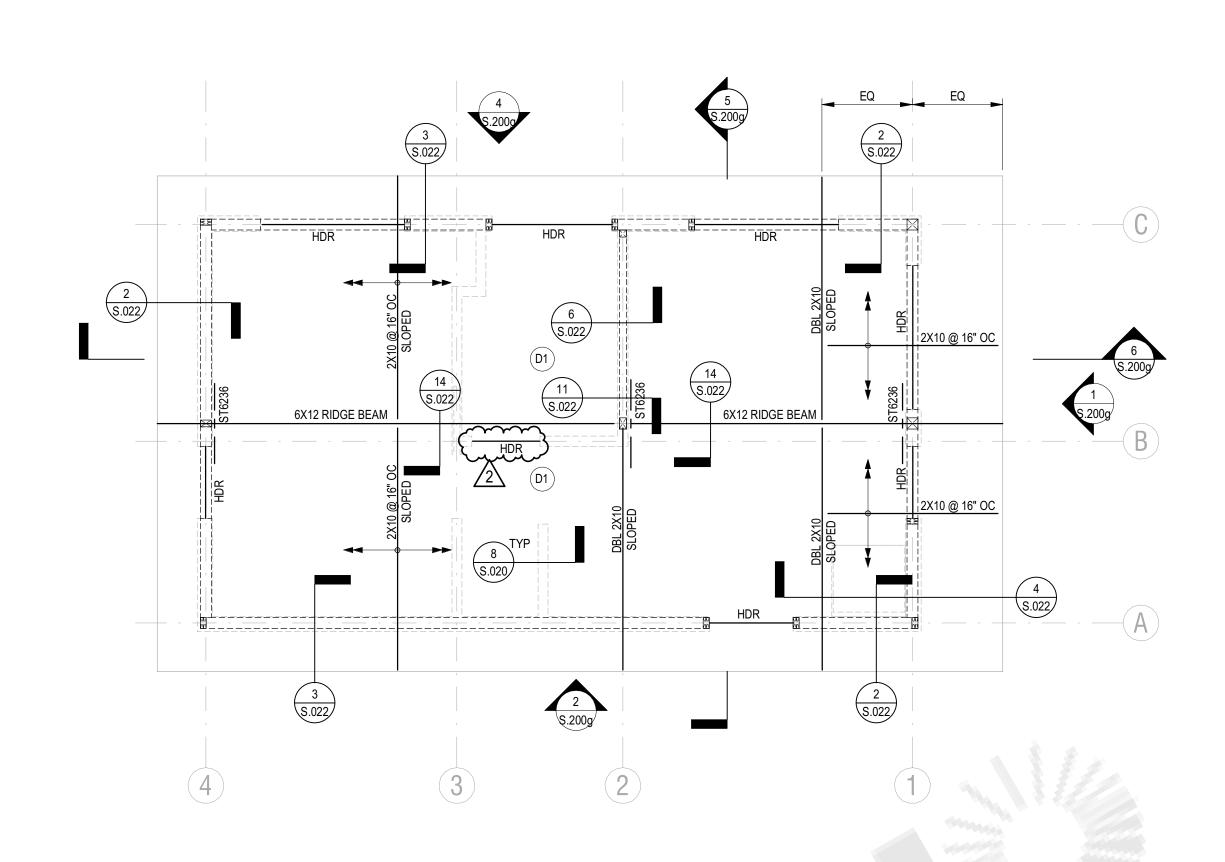
1 REVISION #1 04.01.22 PLAN CHECK CORRECTIONS

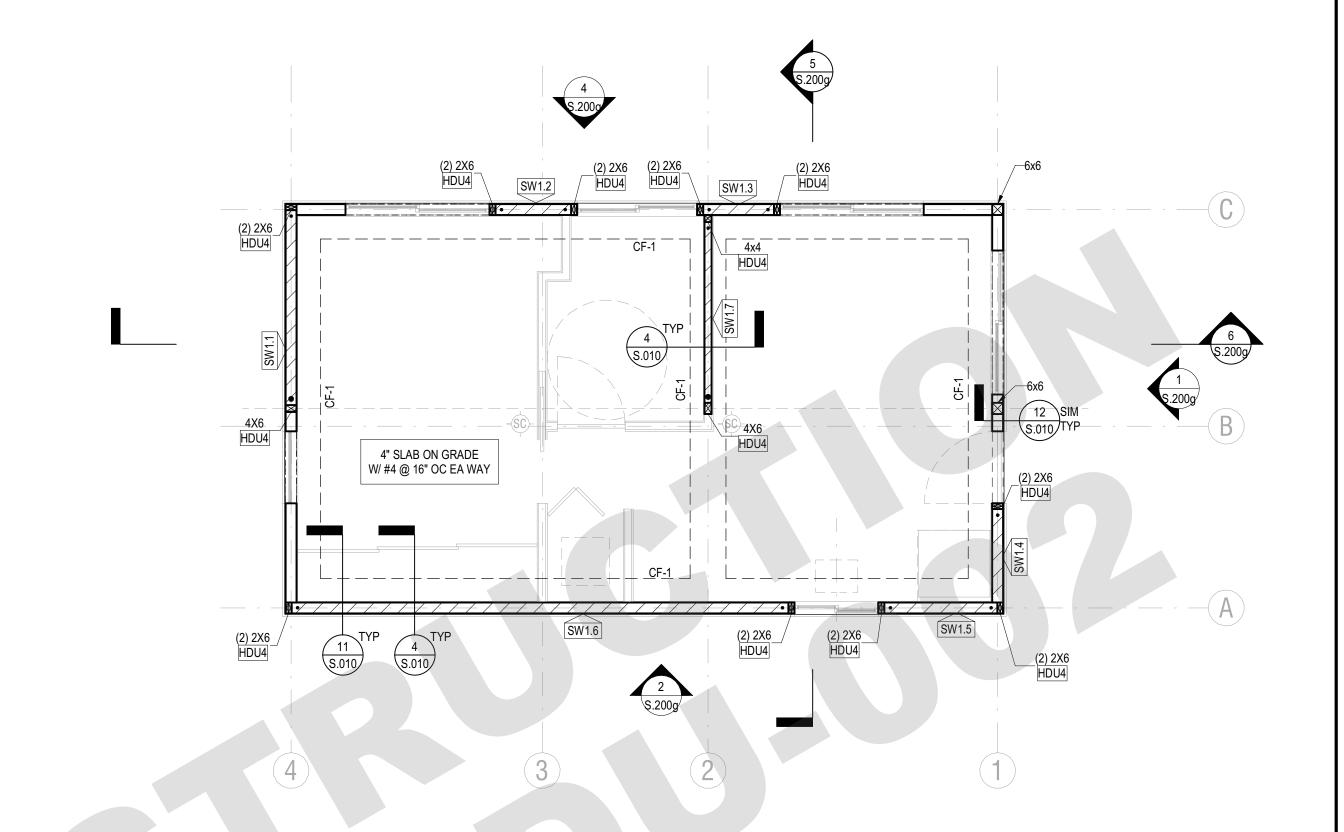
INNODEZ DESIGN AND ENGINEERING 726 FOXBROUGH PLACE PLEASANTON, CALIFORNIA 94566 P. 424.414.0997

1 CRAFTSMAN FOUNDATION PLAN

1/4" = 1'-0"

CRAFTSMAN FOUNDATION AND





- REFER TO SO SERIES SHEETS FOR GENERAL NOTES AND TYPICAL DETAILS. 2. DEPRESSIONS, CURBS, AND OPENINGS SHOWN ON THIS PLAN ARE NOT COMPLETE AS TO NUMBER, SIZE, AND LOCATION. FOR COMPLETE INFORMATION, REFER TO DRAWINGS OTHER THAN STRUCTURAL.
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- 4. WHERE DROPPED CEILINGS OCCUR, CONNECT TO ADJACENT STUD WALLS PER DETAIL 13 / S.020 AND 14 / S.020

FRAMING PLAN LEGEND

INDICATES WALL BELOW

INDICATES DIAPHRAGM TYPE, FOR ADDITIONAL INFORMATION REFER TO 7 / S.023

INDICATES DROPPED HEADER FOR SIZE AND SUPPORTS SEE DETAIL 11/S.020, UON ON PLAN

WHERE HEADER INTERUPTS TOP PLATES OF STUD WALL, PROVIDE MIN CS14 STRAP FROM HEADER TO ADJACENT WALLS, DEVELOPMENT LENGTH AND FASTENING PER MANUFACTURER, UON ON PLAN SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL ROUGH OPENING DIMENSIONS, ALLOW FOR TRIMMERS AND JAMB STUDS ADJACENT TO HOLDOWN POST LOCATIONS

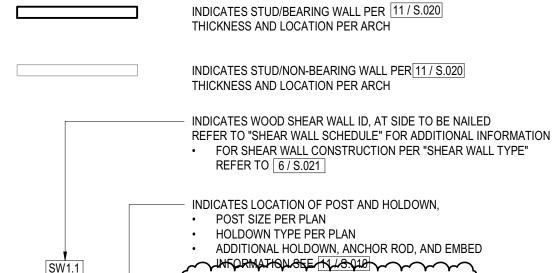
INDICATES WOOD BEAM WITH SIMPSON HANGER CONNECTION TO STUD WALL PER 7 / S.022

#### **FOUNDATION PLAN NOTES**

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#### **FOUNDATION PLAN LEGEND**



6x6 HDU8	FOR ANCHOR BOLT SETTING OUT DIMENSIONS  SEE 7/S.021  2	
	DICATES WOOD SHEAR WALL EXTENTS, ABOVE	

 INDICATES WOOD SHEAR WALL EXTENTS, ABOVE
LENGTH SHOWN IN SCHEDULE INDICATES APPROXIMATE LENGTH
OF SHEAR WALL, ACTUAL LENGTH MAY DEVIATE +/- 6".

	WOOD SHEAR W	VALL SCHEDULE	
WALL ID	SHEAR WALL TYPE	LENGTH	WIDTH
SW1.1	A	8'-6"	5 1/2"
SW1.2	В	3'-6"	5 1/2"
SW1.3	В	3'-6"	5 1/2"
SW1.4	A	4'-0"	5 1/2"
SW1.5	A	5'-0"	5 1/2"
SW1.6	A	21'-0"	5 1/2"

8'-6"

3 1/2"

CONTINUOUS FOOTING SCHEDULE

CF-1 1'-6" 1'-6" (2) #5 (2) #5 #4 @ 12" OC

TYPE MARK | WIDTH, W | DEPTH, D | TOP BARS | BOTTOM BARS | TIES

1 GABLE (GABLE-STUCCO) FOUNDATION PLAN



#### ADU PROGRAM

CITY OF FRESNO PLANNING AND DEVELOPMENT DEPARTMENT 2600 FRESNO STREET, 3RD FLOOR

AARON NEUBERT ARCHITECTS, INC. 2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900 AARON NEUBERT CA# C-29005

STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC. 600 WILSHIRE BOULEVARD, SUITE 760 LOS ANGELES, CALIFORNIA 90017

MEP ENGINEER:

INNODEZ DESIGN AND ENGINEERING 726 FOXBROUGH PLACE PLEASANTON, CALIFORNIA 94566 P. 424.414.0997

REVISION: DATE: 2 REVISION #2 06.03.22 PLAN CHECK CORRECTIONS 1 REVISION #1 04.01.22 PLAN CHECK CORRECTIONS

ADU PROGRAM CITY OF FRESNO

DRAWING TITLE:

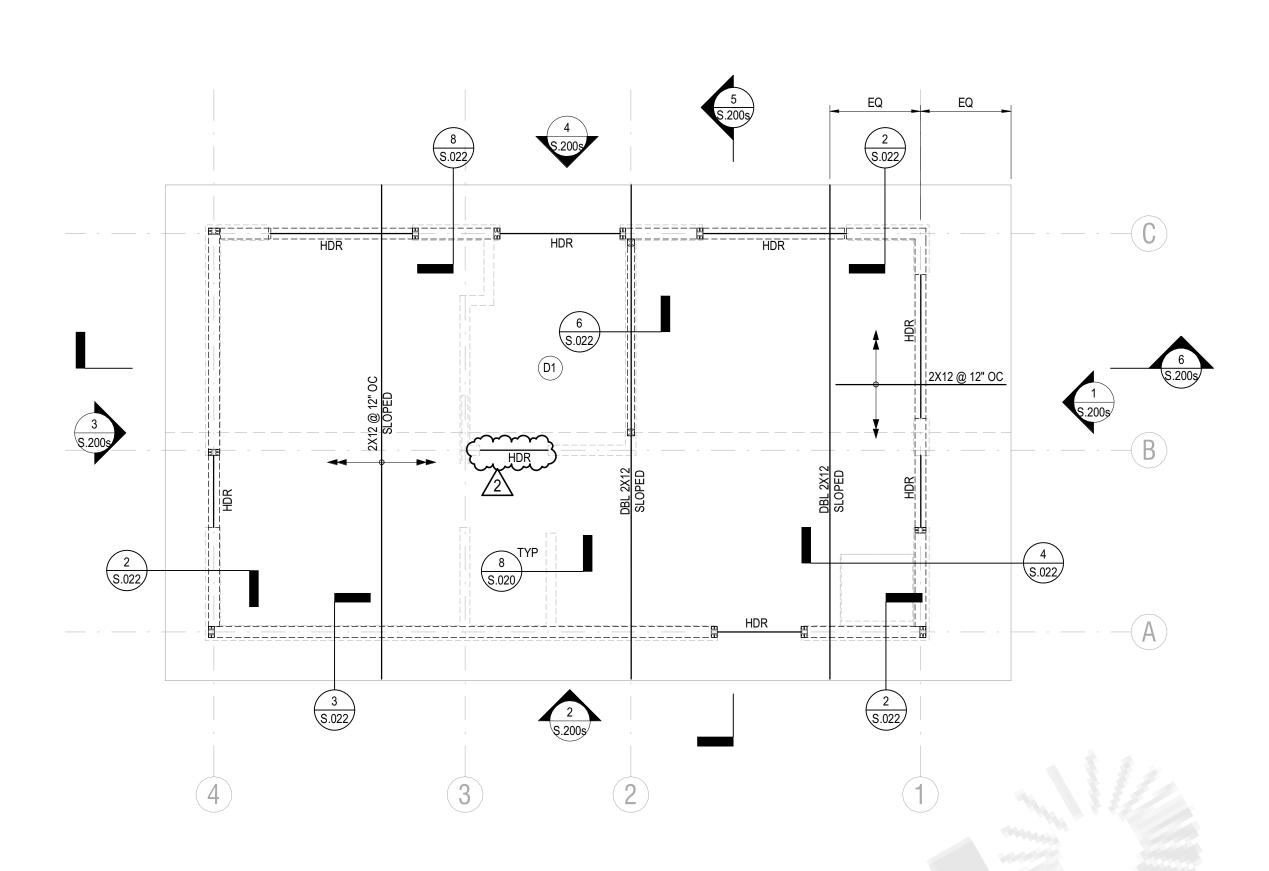
CALIFORNIA

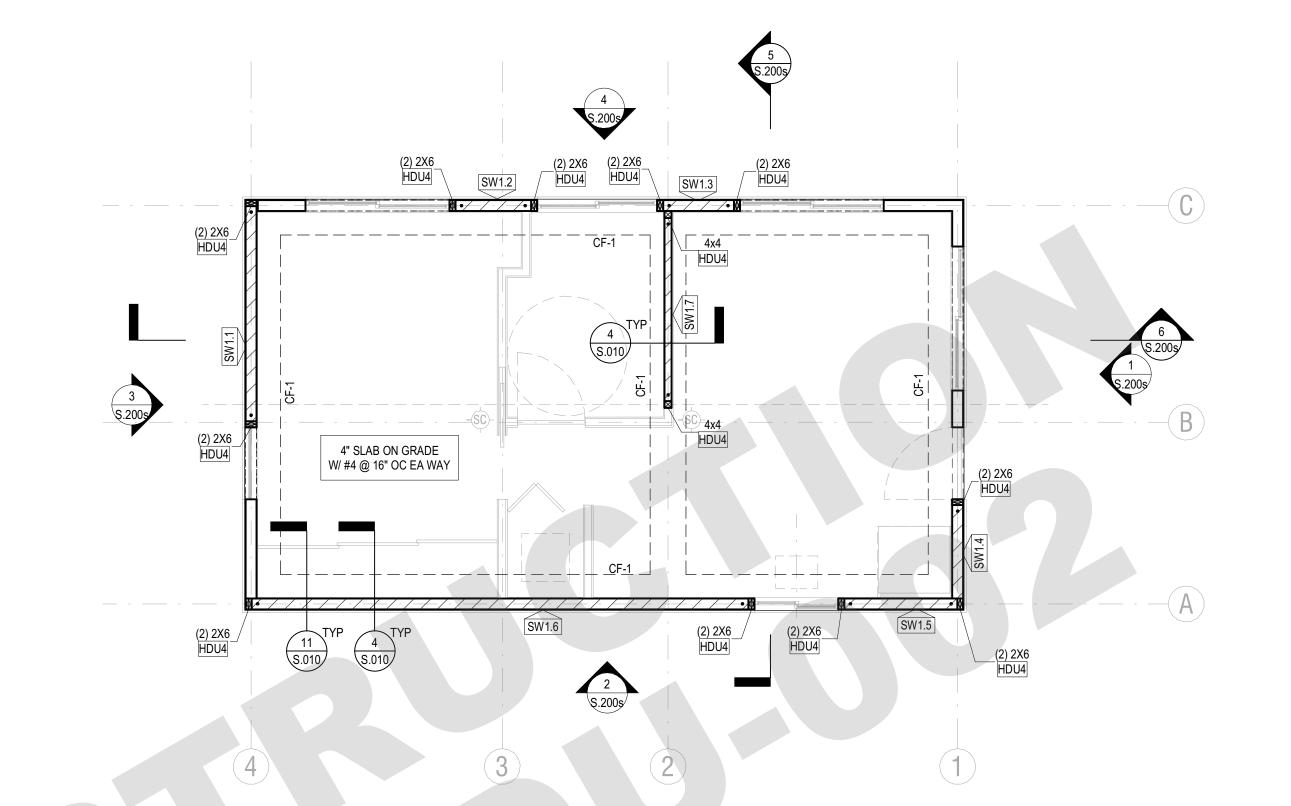
**ADU 02** GABLE (GABLE-STUCCO) FOUNDATION AND FRAMING **PLANS** 

DATE: APRIL 1, 2022 SCALE: AS NOTED

DRAWN BY:

**GABLE (GABLE-STUCCO) ROOF FRAMING PLAN**1/4" = 1'-0"





- REFER TO SO SERIES SHEETS FOR GENERAL NOTES AND TYPICAL DETAILS. 2. DEPRESSIONS, CURBS, AND OPENINGS SHOWN ON THIS PLAN ARE NOT COMPLETE AS TO NUMBER, SIZE, AND LOCATION. FOR COMPLETE INFORMATION, REFER TO DRAWINGS OTHER THAN STRUCTURAL.
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- 4. WHERE DROPPED CEILINGS OCCUR, CONNECT TO ADJACENT STUD WALLS PER DETAIL 13 / S.020 AND 14 / S.020

REFER TO 7 / S.023

## FRAMING PLAN LEGEND

INDICATES WALL BELOW INDICATES DIAPHRAGM TYPE, FOR ADDITIONAL INFORMATION

HDR

INDICATES DROPPED HEADER FOR SIZE AND SUPPORTS SEE DETAIL 11/S.020, UON ON PLAN

WHERE HEADER INTERUPTS TOP PLATES OF STUD WALL, PROVIDE MIN CS14 STRAP FROM HEADER TO ADJACENT WALLS, DEVELOPMENT LENGTH AND FASTENING PER MANUFACTURER, UON ON PLAN SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL ROUGH OPENING DIMENSIONS, ALLOW FOR TRIMMERS AND JAMB STUDS ADJACENT TO HOLDOWN POST LOCATIONS

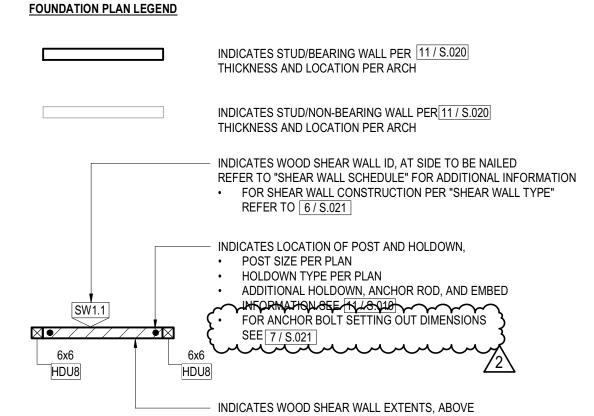
INDICATES WOOD BEAM WITH SIMPSON HANGER

CONNECTION TO STUD WALL PER 7 / S.022

- **FOUNDATION PLAN NOTES** 1. TOP OF FOOTING GRADE BEAM ELEVATION TO BE 1'-0" BELOW TOP OF SLAB OR FINISHED GRADE, UON.
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LENGTH SHOWN IN SCHEDULE INDICATES APPROXIMATE LENGTH

OF SHEAR WALL, ACTUAL LENGTH MAY DEVIATE +/- 6".

WOOD SHEAR WALL SCHEDULE			
WALL ID	SHEAR WALL TYPE	LENGTH	WIDTH
SW1.1	A	9'-6"	5 1/2"
SW1.2	В	3'-6"	5 1/2"
SW1.3	В	3'-6"	5 1/2"
SW1.4	A	4'-0"	5 1/2"
SW1.5	A	5'-0"	5 1/2"
SW1.6	A	21'-0"	5 1/2"
CM4.7	Λ.	01.011	2.4/0!!

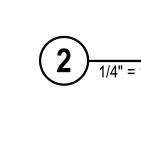
CONTINUOUS FOOTING SCHEDULE

CF-1 1'-6" 1'-6" (2) #5 (2) #5 #4 @ 12" OC

TYPE MARK | WIDTH, W | DEPTH, D | TOP BARS | BOTTOM BARS | TIES

**CONTEMPORARY FOUNDATION PLAN**  SW1.7 A 8'-0" 3 1/2"

CONTEMPORARY **ROOF FRAMING PLAN** 



AARON NEUBERT ARCHITECTS

ADU PROGRAM

CITY OF FRESNO PLANNING AND DEVELOPMENT DEPARTMENT 2600 FRESNO STREET, 3RD FLOOR

AARON NEUBERT ARCHITECTS, INC. 2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900

AARON NEUBERT CA# C-29005

STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC. 600 WILSHIRE BOULEVARD, SUITE 760 LOS ANGELES, CALIFORNIA 90017

MEP ENGINEER:

INNODEZ DESIGN AND ENGINEERING 726 FOXBROUGH PLACE PLEASANTON, CALIFORNIA 94566 P. 424.414.0997

REVISION: DATE: 2 REVISION #2 06.03.22 PLAN CHECK CORRECTIONS 1 REVISION #1 04.01.22 PLAN CHECK CORRECTIONS

ADU PROGRAM

DRAWING TITLE:

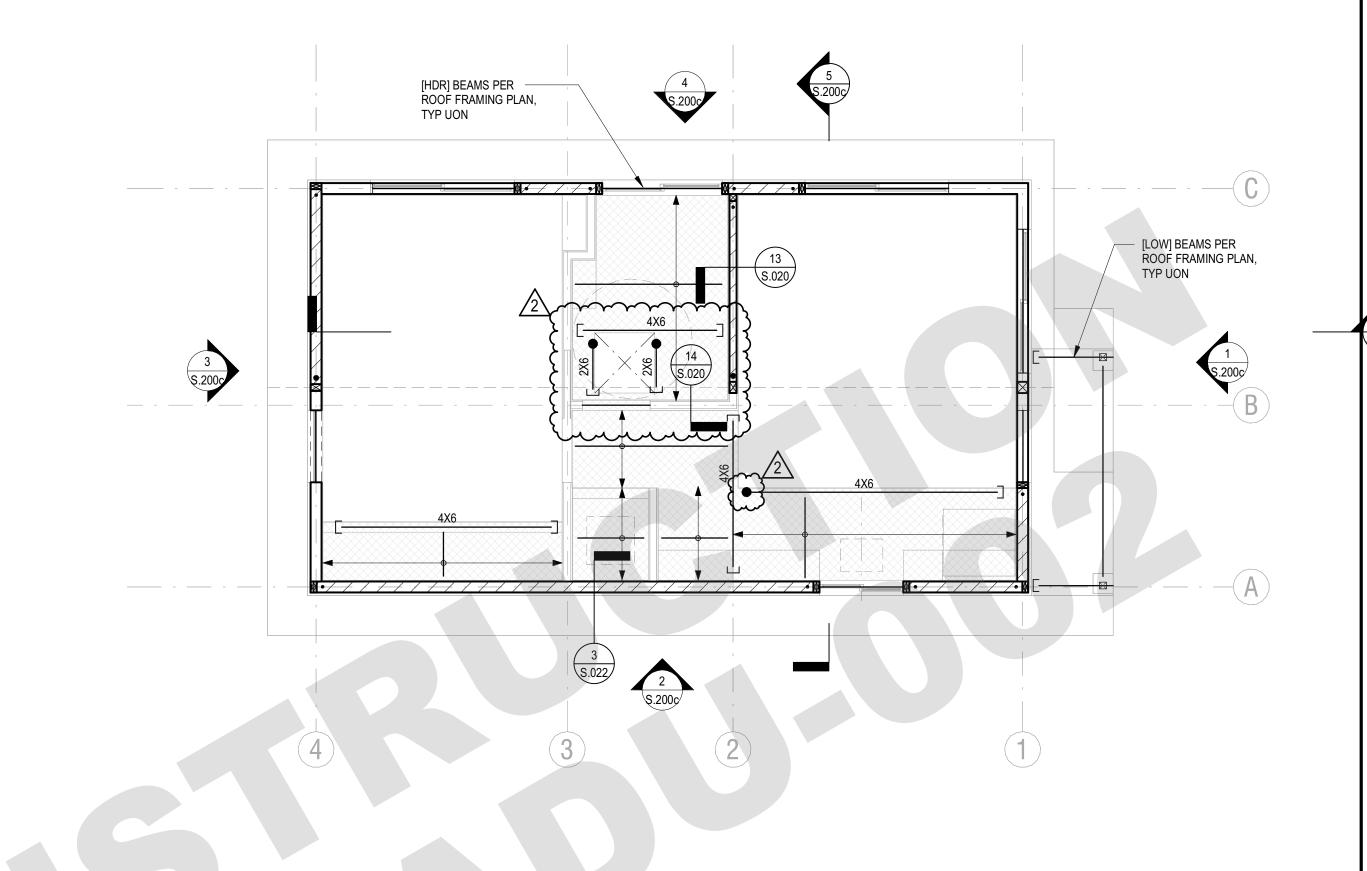
CITY OF FRESNO

CALIFORNIA

**ADU 02** CONTEMPORARY FOUNDATION AND FRAMING **PLANS** 

DATE: APRIL 1, 2022 SCALE: AS NOTED

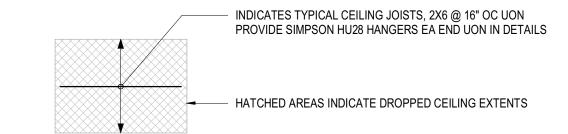
DRAWN BY:



- REFER TO S0 SERIES SHEETS FOR GENERAL NOTES AND TYPICAL DETAILS.
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  3. GENERAL CONTRACTOR SHALL COORDINATE THE LOCATION OF EQUIPMENT SUPPORT BEAMS AND BEAMS AROUND FLOOR OPENINGS WITH ALL PROJECT REQUIREMENTS.

#### FRAMING PLAN LEGEND



INDICATES WOOD BEAM WITH SIMPSON HANGER CONNECTION TO STUD WALL PER 5 / S.020

INDICATES WOOD BEAM TO BEAM CONNECTION WITH SIMPSON LU HANGER



## ADU PROGRAM

OWNER:

CITY OF FRESNO
PLANNING AND DEVELOPMENT DEPARTMENT
2600 FRESNO STREET, 3RD FLOOR
FRESNO, CA 93721

AARON NEUBERT ARCHITECTS, INC.
2814 ROWENA AVENUE, SUITE ONE
LOS ANGELES, CALIFORNIA 90039
P. 323.953.4700 F. 323.953.4900

AARON NEUBERT CA# C-29005

STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC. 600 WILSHIRE BOULEVARD, SUITE 760 LOS ANGELES, CALIFORNIA 90017 P. 213.627.6687

MEP ENGINEER:

INNODEZ DESIGN AND ENGINEERING
726 FOXBROUGH PLACE
PLEASANTON, CALIFORNIA 94566
P. 424.414.0997

REVISION: DATE: COMMENT:

2 REVISION #2 06.03.22 PLAN CHECK CORRECTIONS

1 REVISION #1 04.01.22 PLAN CHECK CORRECTIONS

SEAL:

REVISION #1 04.01.22 PLAN CHECK CORRECTIONS

## Project No. 2104 ADU PROGRAM

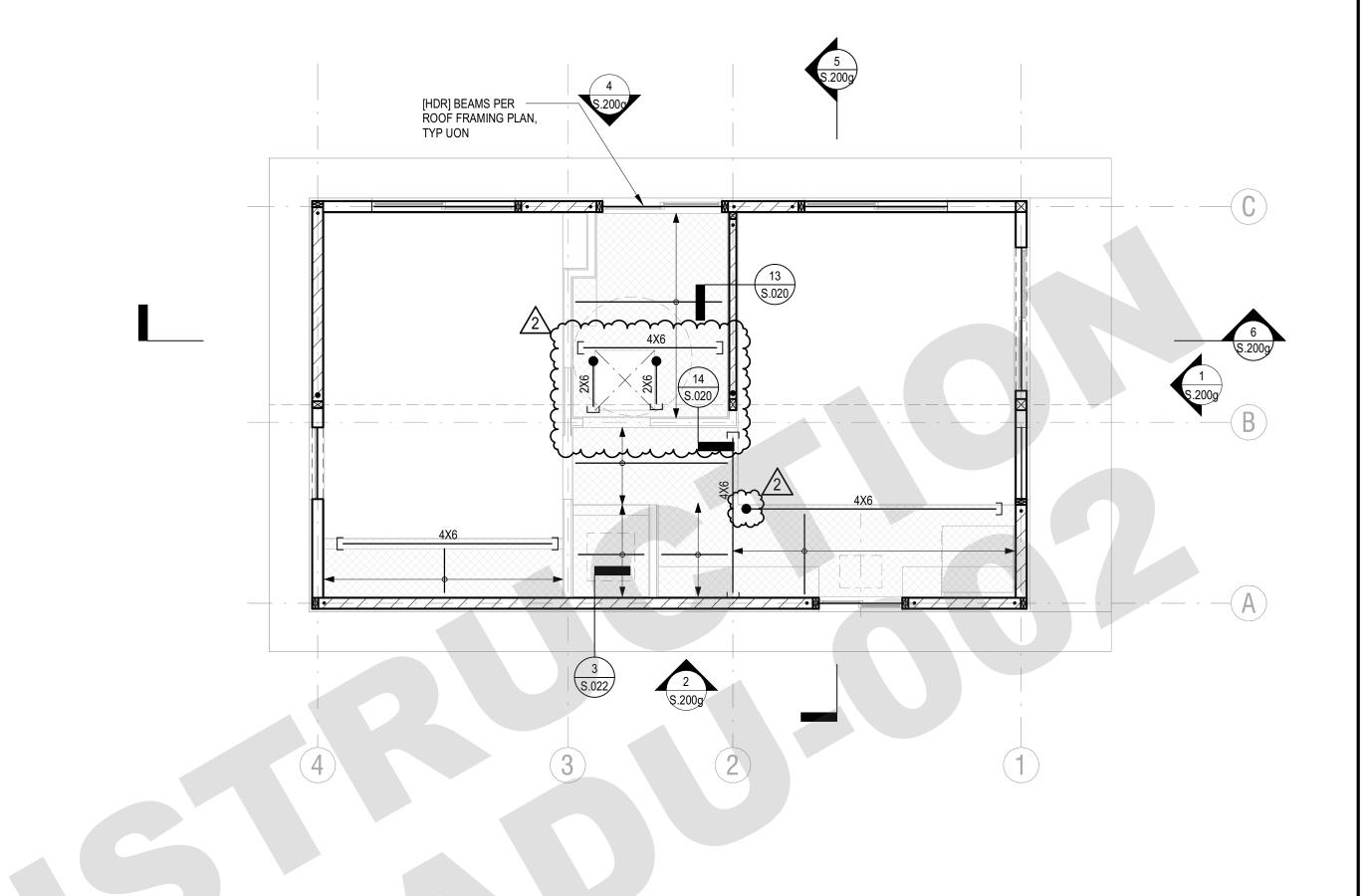
CITY OF FRESNO CALIFORNIA

CRAFTSMAN CEILING FRAMING

DATE: APRIL 1, 2022

SCALE: AS NOTED
DRAWN BY:

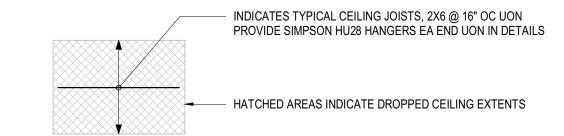
S.110



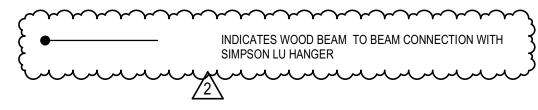
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#### FRAMING PLAN LEGEND



INDICATES WOOD BEAM WITH SIMPSON HANGER CONNECTION TO STUD WALL PER 5 / S.020





#### ADU PROGRAM

OWNER:

CITY OF FRESNO
PLANNING AND DEVELOPMENT DEPARTMENT
2600 FRESNO STREET, 3RD FLOOR
FRESNO, CA 93721

RCHITECT:

AARON NEUBERT ARCHITECTS, INC.
2814 ROWENA AVENUE, SUITE ONE
LOS ANGELES, CALIFORNIA 90039
P. 323.953.4700 F. 323.953.4900

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PLEASANTON, CALIFORNIA 94566
P. 424.414.0997

REVISION: DATE: COMMENT:

2 REVISION #2 06.03.22 PLAN CHECK CORRECTIONS

1 REVISION #1 04.01.22 PLAN CHECK CORRECTIONS

SEAL: CROMENT:

COMMENT:

## Project No. 2104 ADU PROGRAM

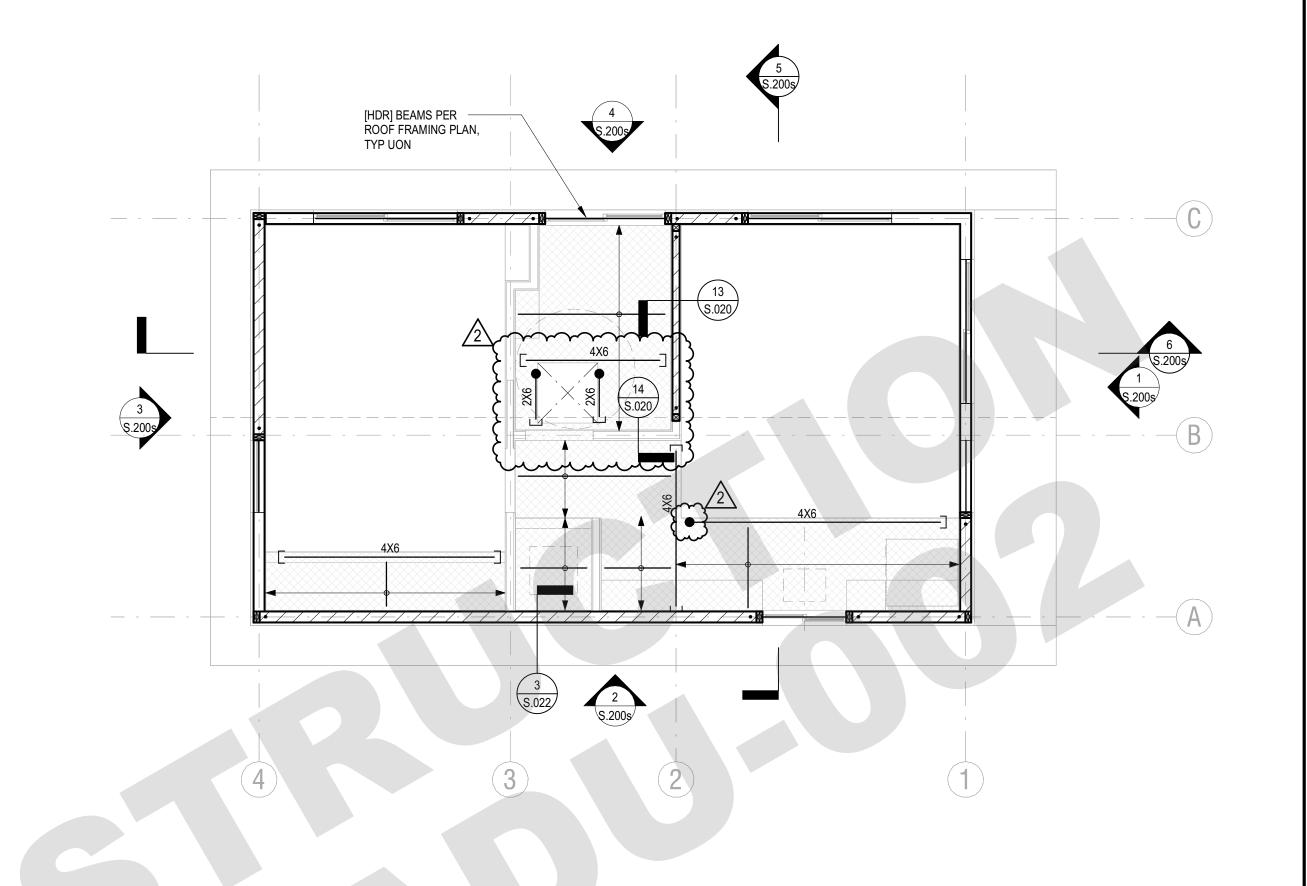
CITY OF FRESNO CALIFORNIA

GABLE (GABLE-STUCCO) CEILING FRAMING PLAN

DATE: APRIL 1, 2022

SCALE: AS NOTED
DRAWN BY:

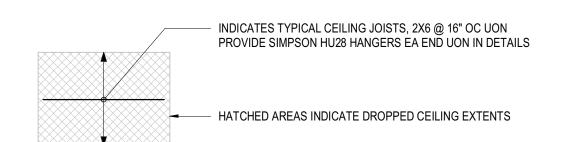
S.110



- REFER TO S0 SERIES SHEETS FOR GENERAL NOTES AND TYPICAL DETAILS.
   DEPRESSIONS, CURBS, AND OPENINGS SHOWN ON THIS PLAN ARE NOT COMPLETE AS TO NUMBER, SIZE, AND LOCATION. FOR COMPLETE INFORMATION, REFER TO DRAWINGS OTHER THAN
- STRUCTURAL.

  3. GENERAL CONTRACTOR SHALL COORDINATE THE LOCATION OF EQUIPMENT SUPPORT BEAMS AND BEAMS AROUND FLOOR OPENINGS WITH ALL PROJECT REQUIREMENTS.

#### FRAMING PLAN LEGEND



INDICATES WOOD BEAM WITH SIMPSON HANGER CONNECTION TO STUD WALL PER 5 / S.020

INDICATES WOOD BEAM TO BEAM CONNECTION WITH SIMPSON LU HANGER

CONTEMPORARY
CEILING FRAMING PLAN



### ADU PROGRAM

OWNER:

CITY OF FRESNO
PLANNING AND DEVELOPMENT DEPARTMENT
2600 FRESNO STREET, 3RD FLOOR
FRESNO, CA 93721

AARON NEUBERT ARCHITECTS, INC.
2814 ROWENA AVENUE, SUITE ONE
LOS ANGELES, CALIFORNIA 90039
P. 323.953.4700 F. 323.953.4900

STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC. 600 WILSHIRE BOULEVARD, SUITE 760 LOS ANGELES, CALIFORNIA 90017 P. 213.627.6687

AARON NEUBERT CA# C-29005

MEP ENGINEER:

INNODEZ DESIGN AND ENGINEERING
726 FOXBROUGH PLACE
PLEASANTON, CALIFORNIA 94566
P. 424.414.0997

REVISION: DATE: COMMENT:

2 REVISION #2 06.03.22 PLAN CHECK CORRECTIONS

1 REVISION #1 04.01.22 PLAN CHECK CORRECTIONS

SEAL: PROFESSION #1 MARILE RETH MARILE RETHER R

Project No. 2104

Project No. 2104
ADU PROGRAM
CITY OF FRESNO
CALIFORNIA

DRAWING TITLE:

CONTEMPOARY CEILING

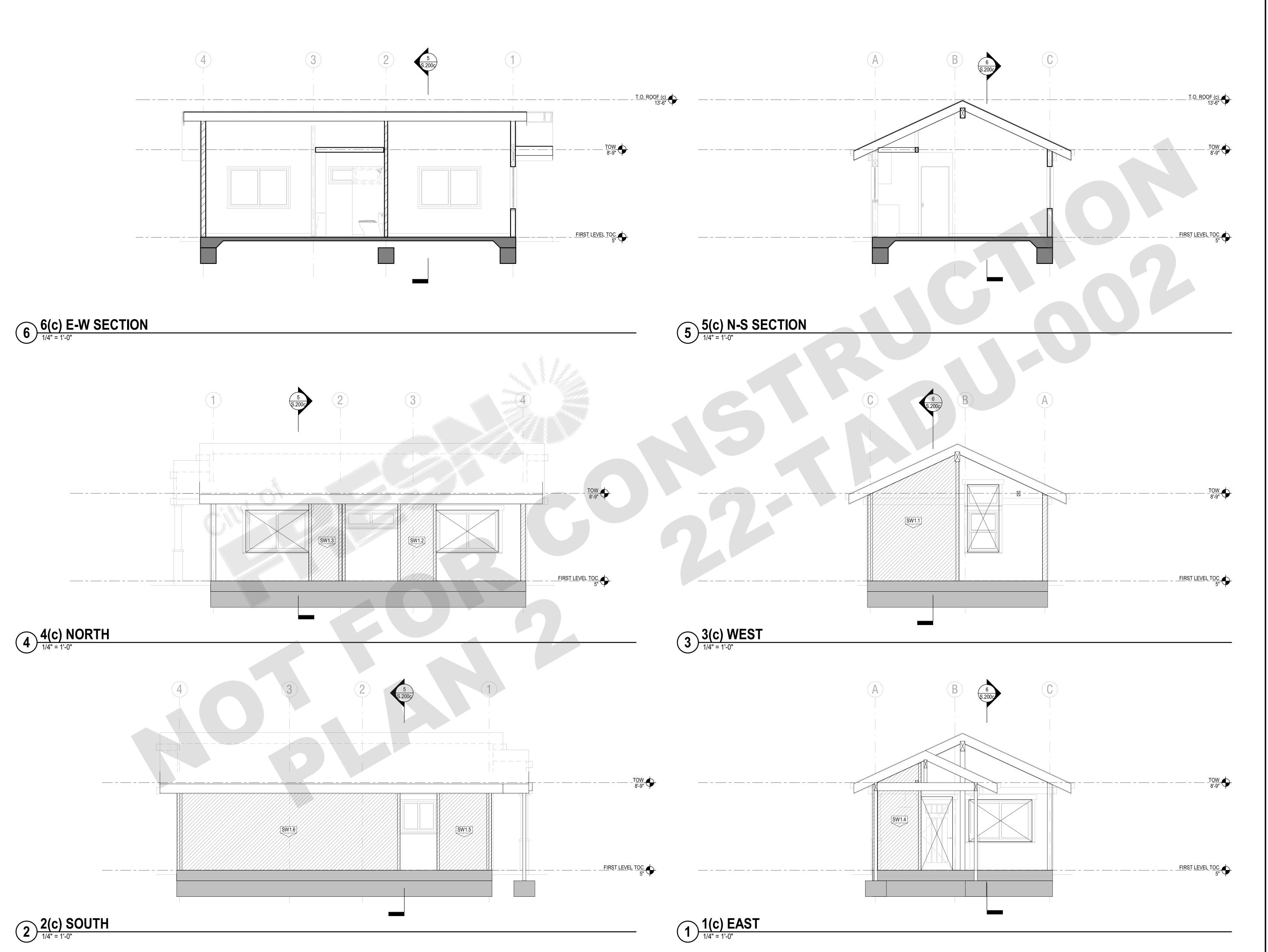
FRAMING PLAN

DATE: APRIL 1, 2022

SCALE: AS NOTED

DRAWN BY:

S.110





#### ADU PROGRAM

OWNER:

CITY OF FRESNO
PLANNING AND DEVELOPMENT DEPARTMENT
2600 FRESNO STREET, 3RD FLOOR
FRESNO, CA 93721

ARCHITECT:

AARON NEUBERT ARCHITECTS, INC.
2814 ROWENA AVENUE, SUITE ONE
LOS ANGELES, CALIFORNIA 90039
P. 323.953.4700 F. 323.953.4900

AARON NEUBERT CA# C-29005

STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC.
600 WILSHIRE BOULEVARD, SUITE 760
LOS ANGELES, CALIFORNIA 90017
P. 213.627.6687

MEP ENGINEER:

INNODEZ DESIGN AND ENGINEERING
726 FOXBROUGH PLACE
PLEASANTON, CALIFORNIA 94566
P. 424.414.0997

REVISION: DATE: COMMENT:

2 REVISION #2 06.03.22 PLAN CHECK CORRECTIONS

1 REVISION #1 04.01.22 PLAN CHECK CORRECTIONS

SEAL:

C80463
EXP 03/31/2023

C7VIL CRIME

## Project No. 2104 ADU PROGRAM

CITY OF FRESNO CALIFORNIA

DRAWING TITLE:

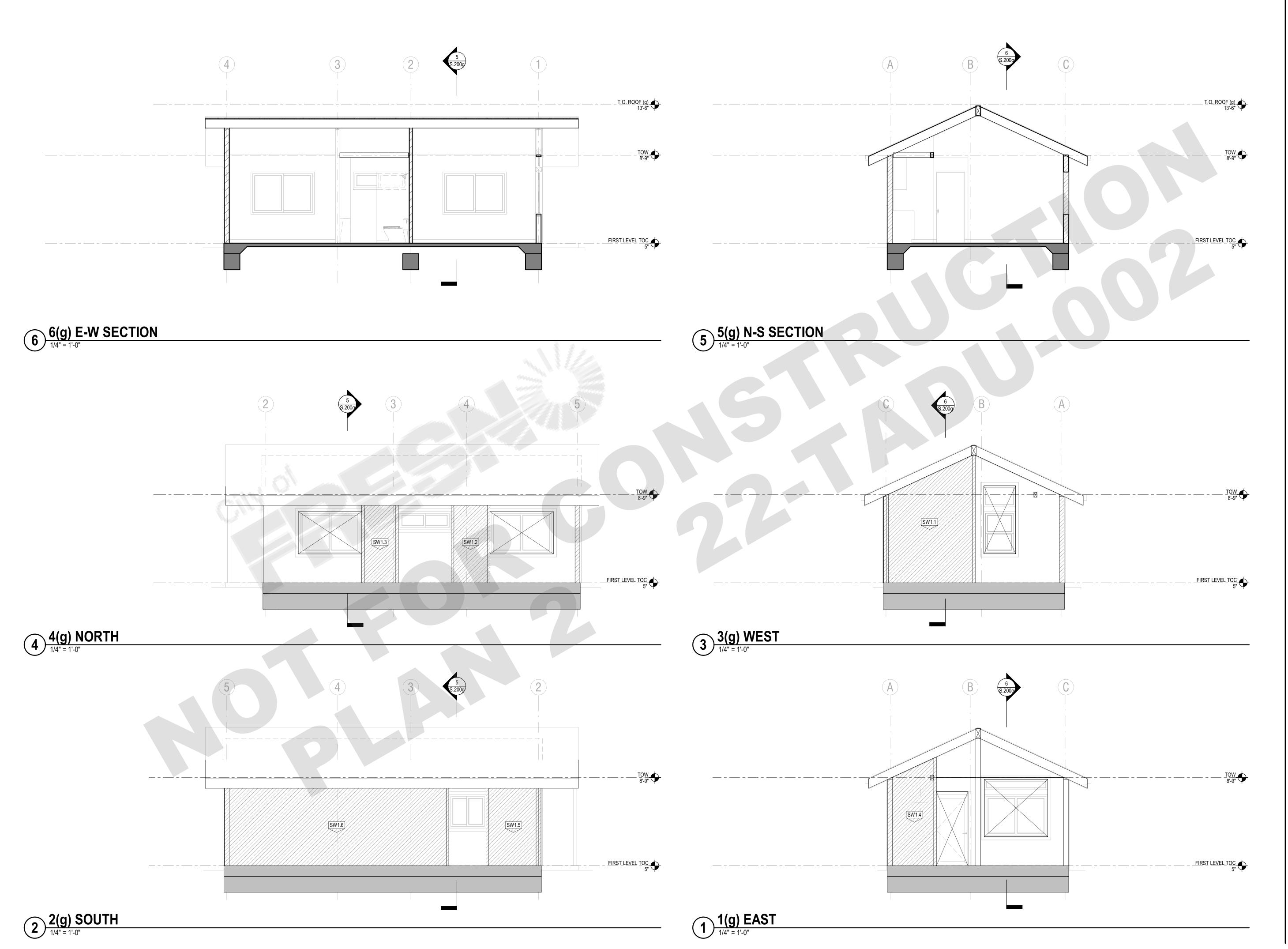
ADU 02 CRAFTSMAN ELEVATIONS SECTIONS

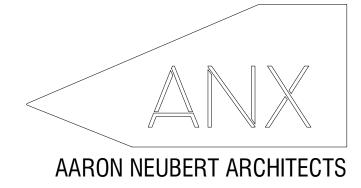
DATE: APRIL 1, 2022

SCALE: AS NOTED

DRAWN BY:

ert Architects, INC. 2021 S.200C





### ADU PROGRAM

CITY OF FRESNO
PLANNING AND DEVELOPMENT DEPARTMENT
2600 FRESNO STREET, 3RD FLOOR
FRESNO, CA 93721

AARON NEUBERT ARCHITECTS, INC. 2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900 AARON NEUBERT CA# C-29005

STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC. 600 WILSHIRE BOULEVARD, SUITE 760 LOS ANGELES, CALIFORNIA 90017 P. 213.627.6687

MEP ENGINEER:

INNODEZ DESIGN AND ENGINEERING 726 FOXBROUGH PLACE PLEASANTON, CALIFORNIA 94566 P. 424.414.0997

2 REVISION #2 06.03.22 PLAN CHECK CORRECTIONS 1 REVISION #1 04.01.22 PLAN CHECK CORRECTIONS

## Project No. 2104 ADU PROGRAM

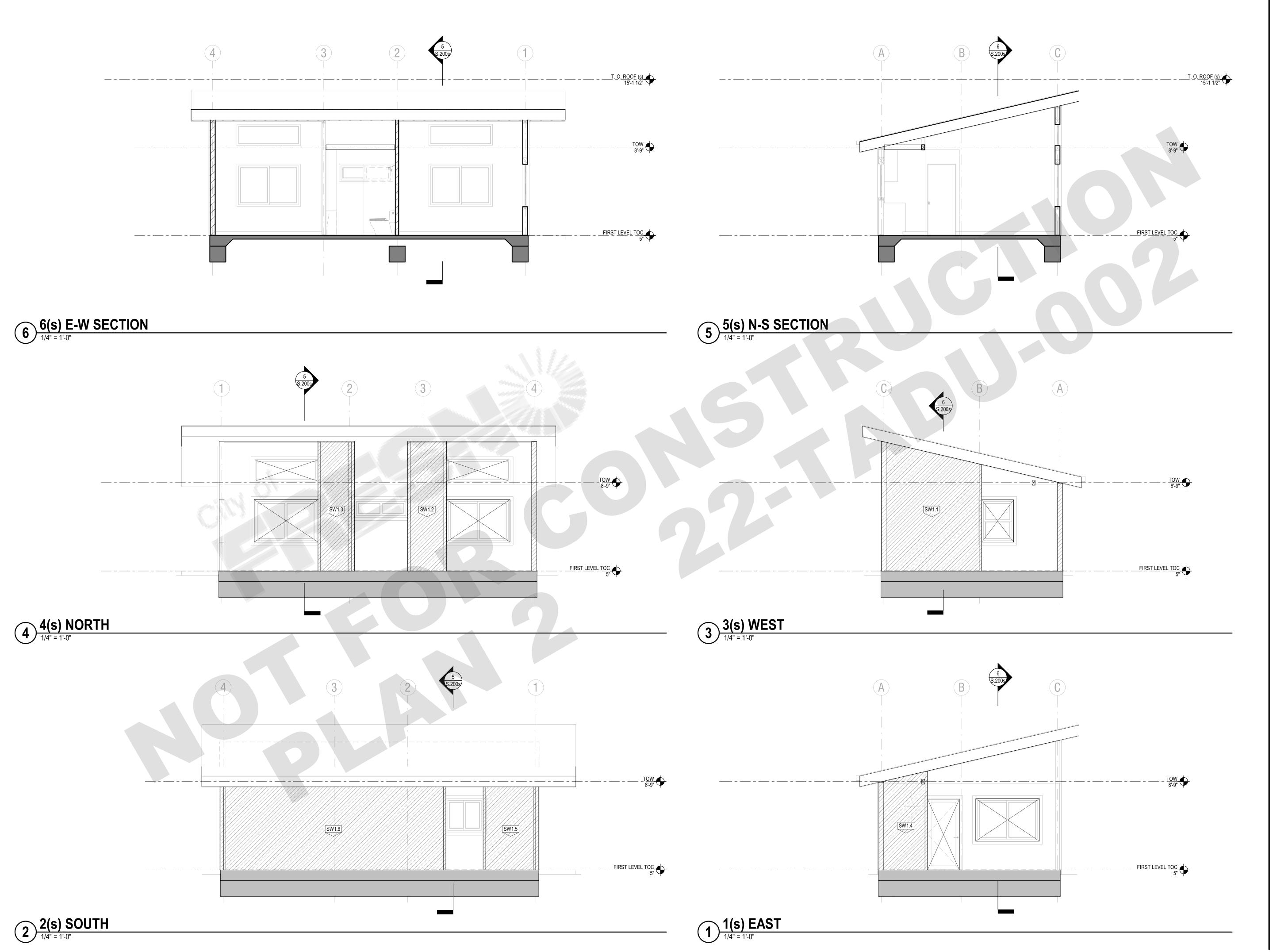
CITY OF FRESNO CALIFORNIA

DRAWING TITLE:

ADU 02 GABLE (GABLE-STUCCO) ELEVATIONS SECTIONS

DATE: APRIL 1, 2022 SCALE: AS NOTED

S.200g





# ADU PROGRAM

CITY OF FRESNO
PLANNING AND DEVELOPMENT DEPARTMENT
2600 FRESNO STREET, 3RD FLOOR
FRESNO, CA 93721

AARON NEUBERT ARCHITECTS, INC. 2814 ROWENA AVENUE, SUITE ONE LOS ANGELES, CALIFORNIA 90039 P. 323.953.4700 F. 323.953.4900 AARON NEUBERT CA# C-29005

STRUCTURAL ENGINEER:

NOUS ENGINEERING, INC. 600 WILSHIRE BOULEVARD, SUITE 760 LOS ANGELES, CALIFORNIA 90017 P. 213.627.6687

MEP ENGINEER:

INNODEZ DESIGN AND ENGINEERING 726 FOXBROUGH PLACE PLEASANTON, CALIFORNIA 94566 P. 424.414.0997

2 REVISION #2 06.03.22 PLAN CHECK CORRECTIONS 1 REVISION #1 04.01.22 PLAN CHECK CORRECTIONS

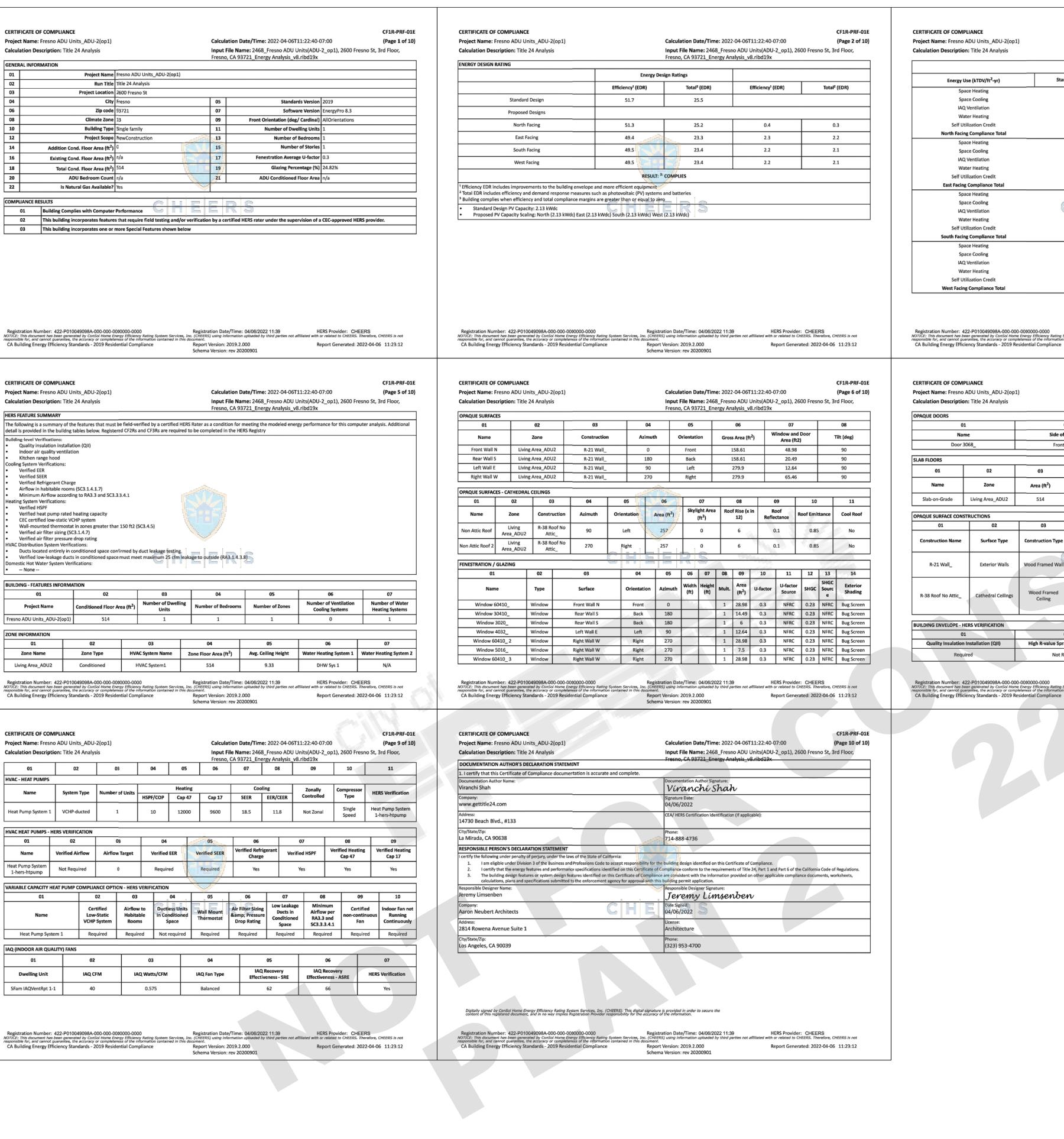
Project No. 2104
ADU PROGRAM CITY OF FRESNO CALIFORNIA

DRAWING TITLE:

ADU 02 CONTEMPORARY **ELEVATIONS SECTIONS** 

DATE: APRIL 1, 2022 SCALE: AS NOTED

S.200s



Project Name: Fresno ADU Units_ADU-2(op1)		Calculation Date/Time: 2022-0	04-06T11:22:40-07:00	(Page 3 of 10)
Calculation Description: Title 24 Analysis		Input File Name: 2468_Fresno Fresno, CA 93721_Energy Anal		Fresno St, 3rd Floor,
	ENERGY	USE SUMMARY		
Energy Use (kTDV/ft²-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	22.27	20.89	1.38	6.2
Space Cooling	75.34	77.55	-2.21	-2.9
IAQ Ventilation	12.01	12.01	0	0
Water Heating	34.09	31.44	2.65	7.8
Self Utilization Credit	n/a	0	0	n/a
North Facing Compliance Total	143.71	141.89	1.82	1.3
Space Heating	22.27	21.55	0.72	3.2
Space Cooling	75.34	66.32	9.02	12
IAQ Ventilation	12.01	12.01	0	0
Water Heating	34.09	31.44	2.65	7.8
Self Utilization Credit	n/a	0	0	n/a
East Facing Compliance Total	143.71	131.32	12.39	8.6
Space Heating	22,27	20.18	2.09	9.4
Space Cooling	75.34	68.15	7.19	9.5
IAQ Ventilation	12.01	12.01	0	0
Water Heating	34.09	31.44	2.65	7.8
Self Utilization Credit	n/a	0	0	n/a
South Facing Compliance Total	143.71	131.78	11.93	8.3
Space Heating	22,27	19.14	3.13	14.1
Space Cooling	75.34	69.42	5.92	7.9
IAQ Ventilation	12.01	12.01	0	0
Water Heating	34.09	31.44	2.65	7.8
Self Utilization Credit	n/a	0	0	n/a
West Facing Compliance Total	143.71	132.01	11.7	8.1

Registration Number: 422-P010049098A-000-0000000-0000 NOTICE: This document has been generated by ConSol Home Energy Efficiency Rating System Servi responsible for, and cannot guarantee, the accuracy or completeness of the information contained in	Registration Date/Time: 04/06/2022 11:39 ices, Inc. (CHEERS) using information uploaded by third parties n	HERS Provider: CHEERS ot affiliated with or related to CHEERS. Therefore, CHEERS is not
responsible for, and cannot guarantee, the accuracy or completeness of the information contained in CA Building Energy Efficiency Standards - 2019 Residential Compliance	this document.  Report Version: 2019.2.000	Report Generated: 2022-04-06 11:23:12
CA building chergy criticiency standards - 2019 Residential Compilance	Schema Version: rev 20200901	Report deficiated. 2022-04-06 11.25.12

ERTIFICATE OF COMF	ADU Units_ADU-2(op1	1		Calculation	Date/Tin	ne: 2022-04-06T1:	1-22-40-07	7-00	CF1R-PRF-01 (Page 7 of 10
alculation Descriptio		,		Input File Na	ame: 246		its(ADU-2	_op1), 2600 Fresn	
PAQUE DOORS				,					
0:	1	02	:			03		0	4
Nar	me	Side of B	uilding		Are	a (ft <sup>2</sup> )		U-fa	ctor
Door 3	3068_	Front V	√all N			20		0.	2
LAB FLOORS									
01	02	03	04	05		06		07	08
Name	Zone	Area (ft <sup>2</sup> )	Perimeter (ft)	Edge Insul. and De		Edge Insul. R-va and Depth	lue Ca	arpeted Fraction	Heated
Slab-on-Grade	Living Area_ADU2	514	94	none	e	0		80%	No
PAQUE SURFACE CONS	TRUCTIONS								
01	02	03	04	1	05	06	07		08
Construction Name	Surface Type	Construction Type	Framing		l Cavity value	Interior / Exterior Continuous R-value	U-factor	Assen	nbly Layers
R-21 Wall_	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C	ER,	3-21	None / None	0.069	Cavity / Fr	h: Gypsum Board ame: R-21 / 2x6 ish: 3 Coat Stucco
R-38 Roof No Attic_	Cathedral Ceilings	Wood Framed Ceiling	2x12 @ 16 in. O. 0	c. F	R-38	None / None	0.03	Roof ( Siding/she Cavity / Fra	toof (Asphalt Shingle) Deck: Wood eathing/decking ame: R-38 / 2x12 h: Gypsum Board
UILDING ENVELOPE - H	IERS VERIFICATION								
0:		02				03		0	4
Quality Insulation	Installation (QII)	High R-value Spray	Foam Insulation	Build	ling Envel	ope Air Leakage		CFN	150

Registration Date/Time: 04/06/2022 11:39

Report Version: 2019.2.000

Schema Version: rev 20200901

	CF1R-PRF-01E		CERTIFICATE OF COI	MPLIANCE	
	(Page 7 of 10)		Project Name: Fresr	no ADU Units_	ADU-2(op1)
snc	St, 3rd Floor,		Calculation Descript	tion: Title 24	Analysis
		]	WATER HEATING SYST	EMS	
04		]	01		02
fact	tor		Name	Syste	em Type
0.2			DHW Sys 1		c Hot Water DHW)
_					
1	08		WATER HEATERS		
†	Heated	1	01	02	03
	No		Name	Heating Element Type	Tank Typ
	08		DHW Heater 1	Gas	Consume Instantane
		1			

HERS Provider: CHEERS

Report Generated: 2022-04-06 11:23:12

CF1R-PRF-01E

REQUIRED SPECIAL FEATURES

Indoor air quality, balanced fan

IAQ Ventilation System: as low as 0.575 W/CFM

IAQ Ventilation System Heat Recovery: minimum 62 SRE and 66 ASRE

Name	Heating Element Type		Туре	# of Units	Tank Vol. (gal)	Energy Factor or Efficiency	Input Rating or Pilot	Tank Insulation R-value (Int/Ext)	Standb or Rec	overy 151	Hr. Rating Flow Rate	NEEA Heat Brand or N			k Location or ent Condition
DHW Heater 1	Gas		sumer taneous	1	0	0.91-UEF	<= 200 kBtu/hr	0	n/	'a	n/a	n/a			n/a
ATER HEATING - HE	RS VERIFICA	TION													
01		02		3	400	- 04		-05		06		07			08
Name	Pipe	Insulation	Paralle	l Piping	C	ompact Distrib	ution Comp	oact Distributio Type	n Reci	rculation C	ontrol	Central DHV Distribution			r Drain Water t Recovery
DHW Sys 1 - 1/1	Not	Required	Not Re	equired		Not Required	1	None		Not Require	ed	Not Require	d	Not	t Required
											,				
PACE CONDITIONING	SYSTEMS														
01		02			03	04	05	06		07	08	09	10	0	11
Name		System	Туре		ting Unit Name	Cooling Uni Name	t Fan Nar	ne Distribu Nam	tion   T	Required hermostat Type	Status	Verified Existing Condition	Heat Equip Cou	ment	Cooling Equipment Count
HVAC System1	. 1	Heat pump hea	ating cooling		at Pump rstem 1	Heat Pump System 1	n/a	n/a		Setback	New	NA	1	L	1

Registration Number: 422-P010049098A-000-000-0000000-0000 Registration Date/Time: 04/06/2022 11:39 CA Building Energy Efficiency Standards - 2019 Residential Compliance Report Version: 2019.2.000 Report Generated: 2022-04-06 11:23:12 Schema Version: rev 20200901

CERTIFICATE OF COMPLIANCE CF1R-PRF-01E Calculation Date/Time: 2022-04-06T11:22:40-07:00 (Page 4 of 10) Project Name: Fresno ADU Units ADU-2(op1) Calculation Description: Title 24 Analysis Input File Name: 2468\_Fresno ADU Units(ADU-2\_op1), 2600 Fresno St, 3rd Floor, Fresno, CA 93721\_Energy Analysis\_v8.ribd19x REQUIRED PV SYSTEMS - SIMPLIFIED 06 07 08 09 10 11 12 Azimuth (deg) Tilt (x in (deg) 12) Inverter Eff. (%) Annual Solar Access (%) DC System Size Exception Module Type Array Type (kWdc) true 150-270 n/a n/a <=7:12 2.13 NA Standard Fixed none

The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.

Variable capacity heat pump compliance option (verification details from VCHP Staff report, Appendix B, and RA3)

. PREPARED BY:
w.getTitle24.com T24

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\*\*Building Energy Efficiency Standards - 2018 Decidents\*\* CA Building Energy Efficiency Standards - 2019 Residential Compliance Report Generated: 2022-04-06 11:23:12 Schema Version: rev 20200901

> CF1R-PRF-01E Calculation Date/Time: 2022-04-06T11:22:40-07:00 (Page 8 of 10) Input File Name: 2468\_Fresno ADU Units(ADU-2\_op1), 2600 Fresno St, 3rd Floor,

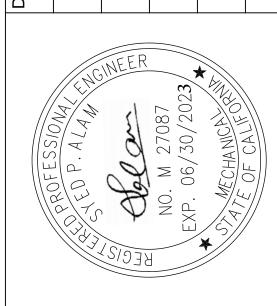
								Fresno	, CA 93721 <sub>_</sub>	Energy Analysis	s_v8.ribd19x		
HEATING SYST	TEMS												
01		02			03			04		05		06	07
Name	Syste	em Typ	e	Dist	ributio	n Type	Wat	er Heater Nam	e (#)	Solar Heating S	ystem Con	pact Distribution	HERS Verification
HW Sys 1	Domesti ([	ic Hot V DHW)	Vater	Stand	ard Dist Systen	ribution n	, ,	DHW Heater 1 (1	L)	n/a		None	n/a
												•	
HEATERS													
01	02		03		04	05	06	07	08	09	10	11	12
Name	Heating Element		Tank Typ	e	# of Units	Tank Vol.	Energy Factor or	Input Rating or Pilot	Tank Insulation R-value	Standby Loss or Recovery	1st Hr. Rating or Flow Rate		Tank Location or Ambient Condition

Name	Heating Element Type	Tank	Ivne	# of Units	Tank Vol. (gal)	Energy Factor or Efficiency	Input Rati or Pilot	1	nculation I	Standby Loss or Recovery Eff		. Rating w Rate	NEEA Heat Brand or N			Location or nt Condition
DHW Heater 1	Gas	Const		1	0	0.91-UEF	<= 200 kBtu/hr	7	0	n/a	r	n/a	n/a			n/a
						_										
WATER HEATING - HER	RS VERIFICAT	ION														
01		02	0	3	100	-04			05	0	6		07			08
Name	Pipe Ir	nsulation	Parallel	Piping	C	ompact Distrib	ution		Distribution ype	Recirculation	on Cont	trol	Central DHV Distribution	_		Drain Water Recovery
DHW Sys 1 - 1/1	Not R	Required	Not Re	quired		Not Require	d	N	one	Not Re	quired		Not Require	d	Not F	Required
SPACE CONDITIONING	SYSTEMS															
01		02			03	04	0	5	06	07		08	09	10		11
Name		System 1	Гуре		ting Unit	t Cooling Uni	it Fan I	lame	Distribution Name	on Requir		Status	Verified Existing	Heatir Equipm	- 1	Cooling Equipment

TITLE SHEE

ENER(OF 5

4 0 . ~~ ⊢



ADU ADU Units\_/ S: 2600 Fresno St Fresno, CA 9372

T24-2

		SURES S	OMINI	ARY					RMS-1
Project Name Fresno ADU	U Units_ADU-1(	op1)	Build	ding Type			tion Alone ing+ Addition/	Alteration	Date 4/6/2022
Project Address	S	-17			ergy Climate Zone		I .	Addition	# g Units
	o St Fresno		C	A Clim	ate Zone 13	3	47	n/a	1
INSULATI			_		Area				
	tion Type		Cav	rity	(ft²) S	Special F	eatures		Status
	od Framed		R 20		605				New
	aque Door		R-5		20				New
	heated Slab-on-Grade	)		sulation	347 Perim	= 74'			New
Roof Wo	ood Framed Rafter		R 38		347				New
FENESTR		Total Area:	65 SHGC		Percentage:		/Altered Averageterior Sha		0.30 Status
Front (N)	on Area(ft²)	0.300	0.23	Overl	nang Side	nns ex		ues	New
Rear (S)	20.5	0.300	0.23	none	none	N/A			New
.eft (E)	12.6	0.300	0.23	none	none	N/A			New
Right (W)	29.0	0.300	0.23	none	ngre	NIA			New
		Min		oling	Mi	n Fff	Therr	mostat	Status
HVAC SY Qty. Hea 1 Split		Min Eft		oling it Heat Pu		n. Eff	<b>Therr</b> Setback	nostat	Status New
Qty. Hea	ating Heat Pump STRIBUTION	1000 HSP	F Spl	it Heat Pu	mp 18.5	5 SEER	Setback <b>D</b> t	uct	New
Qty. Hea  1 Split  HVAC DIS Location	Ating Heat Pump STRIBUTION He	1000 HSP ating	Co	it Heat Pu	Duct Loc	5 SEER	Setback Du	uct Value	New Status
Qty. Hea  1 Split  HVAC DIS Location	ating Heat Pump STRIBUTION	1000 HSP ating	F Spl	it Heat Pu	mp 18.5	5 SEER	Setback <b>D</b> t	uct Value	New
1 Split  HVAC DIS Location HVAC System	Ating Heat Pump  STRIBUTION He  Ducted	10 00 HSP ating	Co	it Heat Pu	Duct Loc Conditioned	5 SEER	Setback Du	uct Value	New Status
1 Split  HVAC DIS Location HVAC System  WATER H Qty. Typ	Ating Heat Pump  STRIBUTION He  Ducted	10 00 HSP ating	Co Duc	oling	Duct Loc Conditioned	ation	Setback Du	uct Value	Status New
1 Split  HVAC DIS Location HVAC System  WATER H Qty. Typ	Ating Heat Pump  STRIBUTION He  Ducted	1000 HSP ating d	Co Duc	oling ted  Min.	Duct Loc Conditioned	ation	Setback Du	uct Value	Status New Status

		<u> </u>	URES S			E 6: -:	F" =	A daller - At	_	RMS-1
Project Na Fresno	ame ADU Units_A	DU-2(o	n1)	Build	ding Type			Addition Alon Existing+ Add	e dition/Alteration	Date 4/6/2022
Project A			/	Calif	fornia Ene	rgy Climate 2	-	I Cond. Floor A		
	resno St Fre	sno				ate Zone		514	n/a	1
INSUL	ATION					Area				
Const	ruction Typ	ре		Cav	rity	$(ft^2)$	Spec	ial Feature	es	Status
Vall	Wood Framed			R 20		729				New
Door	Opaque Door			R-5		20				New
Slab	Unheated Slab-o	n-Grade		- no ins	sulation	514 F	Perim = 94'			New
Roof	Wood Framed R	after		R 38		514				New
FENE	STRATION		I <b>.</b>	420			. 24.8%	T.,		0.30
	tation Area	(ft²)	Total Area: U-Fac S	HGC	Overh	Percentage:	idefins	Exterior	Average U-Factor: Shades	Status
ront (N)		29.0	0.300	0.23	none		one	N/A		New
Rear (S)		20.5	0.300	0.23	none		one	N/A		New
.eft (E)		12.6	0.300	0.23	none	no	one	N/A		New
Right (W)		65.5	0.300	0.23	none	no	one	N/A		New
	SYSTEMS Heating		Min. Eff	Co	oling		Min. E1	f T	hermostat	Status
			Min. Eff		<b>oling</b> it Heat Pui	тр	Min. E1		<b>hermostat</b>	Status New
Qty.	Heating Split Heat Pump  DISTRIBUT	ION Hea	10.00 HSPP	Spli				R Set		
Qty.	Heating Split Heat Pump  DISTRIBUT ion		10.00 HSPP	Spli	it Heat Pui		18.5 SEEF	R Set	Duct Duct	New
Qty.  1  HVAC Locati	Heating Split Heat Pump  DISTRIBUT ion	Hea Ducted	10.00 HSPF	Co	it Heat Pui	Duct I	18.5 SEEF	n Set	Duct R-Value	New Status
Qty.  1  HVAC Locati HVAC Sys	Heating Split Heat Pump  DISTRIBUT ion stem  R HEATING Type	Hea Ducted	10.00 HSPF	Co Duct	oling	Duct I	18.5 SEEF	n Set	Duct R-Value	Status New Status

										RMS
Project Na <i>Fresno</i>	ame ADU Units_A	DU-3(d	op1)	Bui	lding Type			☐ Addition Al☐ Existing+ A	lone Addition/Alteration	Date 4/6/20
Project Ad					lifornia En			tal Cond. Floor		# 4. U
	resno St Fre	sno			CA Clim		ne 13	633	n/a	1
	.ATION ruction Ty	ne		Ca	vity	Area (ft²)	Sne	cial Featu	ıres	Status
Wall	Wood Framed	PC		R 20	vicy	731		olai i catt		New
Door	Opaque Door			R-5		20				New
Slab	Unheated Slab-	on-Grade			nsulation	633		00'		New
Roof	Wood Framed F			R 38		633				New
	STRATION	15/2	Total Area			Percenta		11 minutore	ed Average U-Factor:	0.30
	ation Area		U-Fac	SHGC	Over	hang	Sidefin		or Shades	Status
Front (N)		41.6	0.300	0.23			none	N/A		New
Rear (S)		47.0	0.300	0.23			none	N/A		New
Left (E) Right (W)		58.0 35.6	0.300	0.23			none	N/A N/A		New New
Rigiil (VV)		35.6	0.300	0.23	none		no le	NA		New
	SYSTEMS									
Qty.	Heating				poling		Min. E		Thermostat	Status
Qty.			Min E		poling Dit Heat Pu	итр	Min. E 18.5 SE		<b>Thermostat</b> Setback	Status New
Qty.	Heating Split Heat Pump	TION				штр			Setback	
Qty.	Heating Split Heat Pump DISTRIBUT		1000 H	SPF Sp	olit Heat Pu			ER S		
Qty.	Heating Split Heat Pump  DISTRIBUT on		1000 H	SPF Sp			18.5 SE	ER S	Setback  Duct	New
Qty.  1  HVAC Locati HVAC Sys	Heating Split Heat Pump  DISTRIBUT on	Ducted	ating	SPF Sp	ooling	<b>Duc</b> Condi	18.5 SE	on S	Duct R-Value	New Status
HVAC Locati HVAC Sys	Heating Split Heat Pump  DISTRIBUT on stem  R HE TING Type	Head Ducted	ating	Co Dua	Doling cted  Min.	<b>Duc</b> Condi	t Locati	on S	Duct R-Value	Status New Status

Project Name			JMMARY			RMS-
	Inits_ADU-4(	(op1)	Building Type	•	sting+ Addition/Alteration	Date 4/6/2/2
Project Address	24				d. Floor Area Addition	# of Un
2600 Fresno S					633 n/a	1
INSULATION	_			Area	F4	21-1
Construction				(ft <sup>2</sup> ) Special I	reatures	Status
Wall Wood F			R 20	750		New
Door Opaque			R-5	20		New
	Framed w/o Craw Framed Rafter	l Space	R 19 R 38	633		New New
FENESTRAT	TION	Total Area:	163 Glazing	Percentage: 25.7% N	W/Altered Average U-Factor:	0.30
	Area(ft <sup>2</sup> )		IGC Overh	, and a second second	cterior Shades	Status
Front (N)	34.4	0.300	0.23 none	none NI.		New
Rear (S)	44.0	0.300	0.23 none	none N/.	A	New
Left (E)	52.0	0.300	0.23 none	none N/.	A	New
Right (W)	32.6	0.300	0.23 none	n ne N/.	A	New
HVAC SYST Qty. Heatin	ng	Min Eff	Cooling	Min. Eff	Thermostat	Status
	ng	Min Eff 1000 HSPF	Cooling Split Heat Puri		Thermostat Setback	Status New
Qty. Heating	ng					
Qty. Heating	ng t Pump RIBUTION					
Qty. Heating 1 Split Heat	ng t Pump RIBUTION	1,00 HSPF	Split Heat Pur	mp 18.5 SEER	Setback	New
Qty. Heating  1 Split Heat  HVAC DISTR Location  HVAC System	RIBUTION He	1,00 HSPF	Split Heat Puri	Duct Location	Duct R-Value	New Status
Qty. Heating 1 Split Heat  HVAC DISTR Location  HVAC System	RIBUTION He	19.00 HSPF	Cooling Ducted	Duct Location Conditioned	Duct R-Value	Status New
Qty. Heating  1 Split Heat  HVAC DISTR Location  HVAC System  WATER HE Qty. Type	RIBUTION He	eating	Cooling Ducted	Duct Location Conditioned	Duct R-Value	New Status
Qty. Heating  1 Split Heat  HVAC DISTR Location  HVAC System  WATER HE Qty. Type	RIBUTION/ He Ducte	eating	Cooling Ducted  Min. E	Duct Location Conditioned  Eff Distribution	Duct R-Value	Status New Status

KESI	DENTIA	L MEAS	SURES S	UMM	ARY						RMS-
Project Na		ADLLE	on4)	Build	ling Type		gle Family Iti Family		tion Alone ing+ Addition	Alteration	Date
Fresno Project Ad	ADU Units	_ADU-5(	op1)	Calif	ornia En	ergy Clima	•		I. Floor Area	Addition	# of Jn
	resno St F	-resno				ate Zor			015	n/a	1
INSUL	ATION					Area	·				
Const	ruction 7	Туре		Cav	ity	(ft²)	Spe	ecial F	eatures		<b>Status</b>
Wall	Wood Frame	ed		R 20		987	,				New
Door	Opaque Doo	or		R-5		20	1				New
Slab	Unheated SI	ab-on-Grade	•	- no ins	ulation	1,015	Perim = 1	140'			New
Roof	Wood Frame	ed Rafter		R 38		1,015					New
					I						
	STRATIOI tation A		Total Area:	253 SHGC	Glazing	Percenta	ge: 24. Sidefin		Altered Average terior Sha		0.30 Status
Front (N)	iation A	41.6	0.300	0.23	none	iany	none	N/A		ues	New
Rear (S)		61.1	0.300	0.23	none		none	N/A			New
Left (E)		100.6	0.300	0.23	none		none	NIA			New
Right (W)		49.5	0.300	0.23	none		non	N/A			New
LIVAC	CVCTEM	0			/						
	SYSTEM Heating	S	Min. Zf	i Co	oling		Min.	Eff	Then	mostat	Status
Qty.	SYSTEM Heating Split Heat Pum		Min. Ef		oling t Heat Pu	ımp	<b>Min.</b> 21.0 St		Theri Setback	mostat	Status New
Qty.	Heating Split Heat Pure	пр				ımp			Setback		
Qty.	Heating Split Heat Puri	UTION	10.00 HSP	F Spli				EER	Setback	mostat uct -Value	
Qty.  f  HVAC Locati	Heating Split Heat Pum DISTRIBI	ution	10.00 HSP	F Spli	t Heat Pu	Duc	21.0 SE	EER	Setback	uct Value	New
Qty.  1  HVAC Locati	Heating Split Heat Pum DISTRIBUTION Stem	UTION Ne	10.00 HSP	F Spli	t Heat Pu	Duc	21.0 SE	EER	Setback Di	uct Value	New Status
Qty.  1  HVAC Locati HVAC Sys	Heating Split Heat Pum DISTRIBI	UTION Ne	ating	F Spli	t Heat Pu	Duc	21.0 SE	ion	Setback Di	uct Value	New Status

	2019 Low-Rise Residential Mandatory Measures Summary
	esidential buildings subject to the Energy Standards must comply with all applicable mandatory measures, regardless of the compliance approach respective section for more information. *Exceptions may apply.
Building Envelop	e Measures:
§ 110.6(a)1:	Air Leakage. Manufactured fenestration, exterior doors, and exterior pet doors must limit air leakage to 0.3 CFM per square foot or less when tested per NFRC-400, ASTM E283 or AAMA/WDMA/CSA 101/I.S.2/A440-2011.*
§ 110.6(a)5:	Labeling. Fenestration products and exterior doors must have a label meeting the requirements of § 10-111(a).
§ 110.6(b):	Field fabricated exterior doors and fenestration products must use U-factors and solar heat gain coefficient (SHGC) values from Tables 110.6-A, 110.6-B, or JA4.5 for exterior doors. They must be caulked and/or weather-stripped.*
§ 110.7:	Air Leakage. All joints, penetrations, and other openings in the building envelope that are potential sources of air leakage must be caulked, gasketed, or weather stripped.
§ 110.8(a):	Insulation Certification by Manufacturers. Insulation must be certified by the Department of Consumer Affairs, Bureau of Household Goods and Services (BHGS).
§ 110.8(g):	Insulation Requirements for Heated Slab Floors. Heated slab floors must be insulated per the requirements of § 110.8(g).
§ 110.8(i):	Roofing Products Solar Reflectance and Thermal Emittance. The thermal emittance and aged solar reflectance values of the roofing material must meet the requirements of § 110.8(i) and be labeled per §10-113 when the installation of a cool roof is specified on the CF1R.
§ 110.8(j):	Radiant Barrier. When required, radiant barriers must have an emittance of 0.05 or less and be certified to the Department of Consumer Affairs.
§ 150.0(a):	Ceiling and Rafter Roof Insulation. Minimum R-22 insulation in wood-frame ceiling; or the weighted average U-factor must not exceed 0.043. Minimum R-19 or weighted average U-factor of 0.054 or less in a rafter roof alteration. Attic access doors must have permanently attached insulation using adhesive or mechanical fasteners. The attic access must be gasketed to prevent air leakage. Insulation must be installed in direct contact with a continuous roof or ceiling which is sealed to limit infiltration and exfiltration as specified in § 110.7, including but not limited to placing insulation either above or below the roof deck or on top of a drywall ceiling.*
§ 150.0(b):	Loose-fill Insulation. Loose fill insulation must meet the manufacturer's required density for the labeled R-value.
§ 150.0(c):	Wall Insulation. Minimum R-13 insulation in 2x4 inch wood framing wall or have a U-factor of 0.102 or less, or R-20 in 2x6 inch wood framing or have a U-factor of 0.071 or less. Opaque non-framed assemblies must have an overall assembly U-factor not exceeding 0.102. Masonry walls must meet Tables 150.1-A or B.*
§ 150.0(d):	Raised-floor Insulation. Minimum R-19 insulation in raised wood framed floor or 0.037 maximum U-factor.*
§ 150.0(f):	Slab Edge Insulation. Slab edge insulation must meet all of the following: have a water absorption rate, for the insulation material alone without facings, no greater than 0.3 percent; have a water vapor permeance no greater than 2.0 perm per inch; be protected from physical damage and UV light deterioration; and, when installed as part of a heated slab floor, meet the requirements of § 110.8(g).
§ 150.0(g)1:	Vapor Retarder. In climate zones 1 through 16, the earth floor of unvented crawl space must be covered with a Class I or Class II vapor retarder. This requirement also applies to controlled ventilation crawl space for buildings complying with the exception to § 150.0(d).
§ 150.0(g)2:	Vapor Retarder. In climate zones 14 and 16, a Class I or Class II vapor retarder must be installed on the conditioned space side of all insulation in all exterior walls, vented attics, and unvented attics with air-permeable insulation.
§ 150.0(q):	Fenestration Products. Fenestration, including skylights, separating conditioned space from unconditioned space or outdoors must have a maximum U-factor of 0.58; or the weighted average U-factor of all fenestration must not exceed 0.58.*
Fireplaces, Decor	rative Gas Appliances, and Gas Log Measures:
§ 110.5(e)	Pilot Light. Continuously burning pilot lights are not allowed for indoor and outdoor fireplaces.
§ 150.0(e)1:	Closable Doors. Masonry or factory-built fireplaces must have a closable metal or glass door covering the entire opening of the firebox.
§ 150.0(e)2:	Combustion Intake. Masonry or factory-built fireplaces must have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper or combustion-air control device."
§ 150.0(e)3:	Flue Damper. Masonry or factory-built fireplaces must have a flue damper with a readily accessible control."
Space Conditioni	ng, Water Heating, and Plumbing System Measures:
§ 110.0-§ 110.3:	Certification. Heating, ventilation and air conditioning (HVAC) equipment, water heaters, showerheads, faucets, and all other regulated appliances must be certified by the manufacturer to the California Energy Commission.*
§ 110.2(a):	HVAC Efficiency. Equipment must meet the applicable efficiency requirements in Table 110.2-A through Table 110.2-K.
§ 110.2(b):	Controls for Heat Pumps with Supplementary Electric Resistance Heaters. Heat pumps with supplementary electric resistance heaters must have controls that prevent supplementary heater operation when the heating load can be met by the heat pump alone; and in which the cut-on temperature for compression heating is higher than the cut-on temperature for supplementary heating, and the cut-off temperature for compression heating is higher than the cut-off temperature for supplementary heating.*
§ 110.2(c):	Thermostats. All heating or cooling systems not controlled by a central energy management control system (EMCS) must have a setback thermostat.*
§ 110.3(c)4:	Water Heating Recirculation Loops Serving Multiple Dwelling Units. Water heating recirculation loops serving multiple dwelling units must meet the air release valve, backflow prevention, pump priming, pump isolation valve, and recirculation loop connection requirements of § 110.3(c)4.
§ 110.3(c)6:	Isolation Valves. Instantaneous water heaters with an input rating greater than 6.8 kBtu per hour (2 kW) must have isolation valves with hose bibbs or other fittings on both cold and hot water lines to allow for flushing the water heater when the valves are closed.
	Pilot Lights Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; bousehold cooking appliances (except

Pilot Lights. Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces; household cooking appliances (except appliances without an electrical supply voltage connection with pilot lights that consume less than 150 Btu per hour); and pool and spa heaters.\*

Building Cooling and Heating Loads. Heating and/or cooling loads are calculated in accordance with the ASHRAE Handbook, Equipment Volume, Applications Volume, and Fundamentals Volume; the SMACNA Residential Comfort System Installation Standards Manual; or the ACCA Manual J using design conditions specified in § 150.0(h)2.

§ 150.0(h)1:

	2019 Low-Rise Residential Mandatory Measures Summary
§ 150.0(h)3A:	Clearances. Air conditioner and heat pump outdoor condensing units must have a clearance of at least five feet from the outlet of any dry
§ 150.0(h)3B:	Liquid Line Drier. Air conditioners and heat pump systems must be equipped with liquid line filter driers if required, as specified by the manufacturer's instructions.
§ 150.0(j)1:	Storage Tank Insulation. Unfired hot water tanks, such as storage tanks and backup storage tanks for solar water-heating systems, must a minimum of R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tanks.
§ 150.0(j)2A:	Water Piping, Solar Water-heating System Piping, and Space Conditioning System Line Insulation. All domestic hot water piping me be insulated as specified in Section 609.11 of the California Plumbing Code. In addition, the following piping conditions must have a miniminsulation wall thickness of one inchor a minimum insulation R-value of 7.7: the first five feet of cold water pipes from the storage tank; all water piping with a nominal diameter equal to or greater than 3/4 inch and less than one inch; all hot water piping with a nominal diameter than 3/4 inch that is: associated with a domestic hot water recirculation system, from the heating source to storage tank or between tanks, buried below grade, and from the heating source to kitchen fixtures.*
§ 150.0(j)3:	Insulation Protection. Piping insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance wind as required by Section 120.3(b). Insulation exposed to weather must be water retardant and protected from UV light (no adhesive tag Insulation covering chilled water piping and refrigerant suction piping located outside the conditioned space must include, or be protected Class I or Class II vapor retarder. Pipe insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve
§ 150.0(n)1:	Gas or Propane Water Heating Systems. Systems using gas or propane water heaters to serve individual dwelling units must include all the following: A dedicated 125 volt, 20 amp electrical receptacle connected to the electric panel with a 120/240 volt 3 conductor, 10 AWG copper branch circuit, within three feet of the water heater without obstruction. Both ends of the unused conductor must be labeled with the word "spare" and be electrically isolated. Have a reserved single pole circuit breaker space in the electrical panel adjacent to the circuit break
§ 150.0(n)2:	Recirculating Loops. Recirculating loops serving multiple dwelling units must meet the requirements of § 110.3(c)5.
§ 150.0(n)3:	Solar Water-heating Systems. Solar water-heating systems and collectors must be certified and rated by the Solar Rating and Certificatic Corporation (SRCC), the International Association of Plumbing and Mechanical Officials, Research and Testing (IAPMO R&T), or by a listi agency that is approved by the Executive Director.
Ducts and Fans	Measures:
§ 110.8(d)3:	<b>Ducts.</b> Insulation installed on an existing space-conditioning duct must comply with § 604.0 of the California Mechanical Code (CMC). If a contractor installs the insulation, the contractor must certify to the customer, in writing, that the insulation meets this requirement.
§ 150.0(m)1:	CMC Compliance. All air-distribution system ducts and plenums must meet the requirements of the CMC §§ 601.0, 602.0, 603.0, 604.0, 6 and ANSI/SMACNA-006-2006 HVAC Duct Construction Standards Metal and Flexible 3rd Edition. Portions of supply-air and return-air duct plenums must be insulated to a minimum installed level of R-6.0 or a minimum installed level of R-4.2 when ducts are entirely in conditioned space as confirmed through field verification and diagnostic testing (RA3.1.4.3.8). Portions of the duct system completely exposed and surrounded by directly conditioned space are not required to be insulated. Connections of metal ducts and inner core of flexible ducts must mechanically fastened. Openings must be sealed with mastic, tape, or other duct-closure system that meets the applicable requirements of 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater that inch, the combination of mastic and either mesh or tape must be used. Building cavities, support platforms for air handlers, and plenums designed or constructed with materials other than sealed sheet metal, duct board or flexible duct must not be used to convey conditioned a Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms must not be compressed to cause reductions in the cross-sectional area.*
§ 150.0(m)2:	Factory-Fabricated Duct Systems. Factory-fabricated duct systems must comply with applicable requirements for duct construction, connections, and closures; joints and seams of duct systems and their components must not be sealed with cloth back rubber adhesive dutapes unless such tape is used in combination with mastic and draw bands.
§ 150.0(m)3:	<b>Field-Fabricated Duct Systems.</b> Field-fabricated duct systems must comply with applicable requirements for: pressure-sensitive tapes, mastics, sealants, and other requirements specified for duct construction.
§ 150.0(m)7:	Backdraft Damper. Fan systems that exchange air between the conditioned space and outdoors must have backdraft or automatic damper.
§ 150.0(m)8:	Gravity Ventilation Dampers. Gravity ventilating systems serving conditioned space must have either automatic or readily accessible, manually operated dampers in all openings to the outside, except combustion inlet and outlet air openings and elevator shaft vents.
§ 150.0(m)9:	<b>Protection of Insulation</b> . Insulation must be protected from damage, sunlight, moisture, equipment maintenance, and wind. Insulation ex to weather must be suitable for outdoor service. For example, protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellul foam insulation must be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation.
§ 150.0(m)10:	Porous Inner Core Flex Duct. Porous inner core flex ducts must have a non-porous layer between the inner core and outer vapor barrier.
§ 150.0(m)11:	Duct System Sealing and Leakage Test. When space conditioning systems use forced air duct systems to supply conditioned air to an occupiable space, the ducts must be sealed and duct leakage tested, as confirmed through field verification and diagnostic testing, in accordance with § 150.0(m)11 and Reference Residential Appendix RA3.
§ 150.0(m)12:	Air Filtration. Space conditioning systems with ducts exceeding 10 feet and the supply side of ventilation systems must have MERV 13 or equivalent filters. Filters for space conditioning systems must have a two inch depth or can be one inch if sized per Equation 150.0-A. Pres drops and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service.*

drops and labeling must meet the requirements in §150.0(m)12. Filters must be accessible for regular service.\*

Space Conditioning System Airflow Rate and Fan Efficacy. Space conditioning systems that use ducts to supply cooling must have a hole for the placement of a static pressure probe, or a permanently installed static pressure probe in the supply plenum. Airflow must be ≥ 350 CFM

per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.45 watts per CFM for gas furnace air handlers and ≤ 0.58 watts per

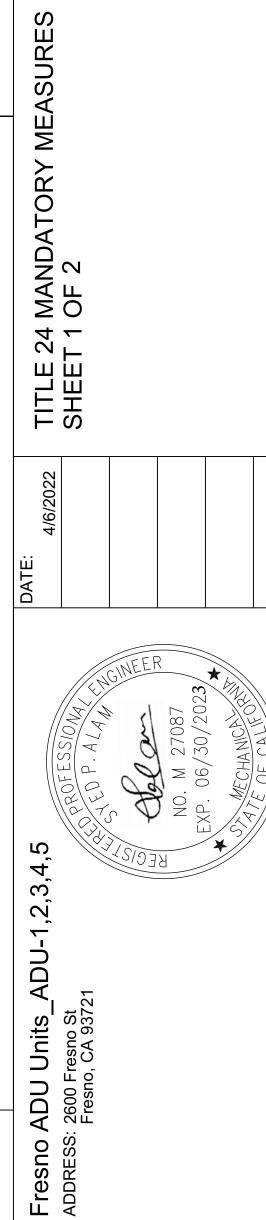
CFM for all others. Small duct high velocity systems must provide an airflow ≥ 250 CFM per ton of nominal cooling capacity, and an air-handling unit fan efficacy ≤ 0.62 watts per CFM. Field verification testing is required in accordance with Reference Residential Appendix RA3.3.\*

§ 150.0(o)1:	Requirements for Ventilation and Indoor Air Quality. All dwelling units must meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings subject to the amendments specified in § 150.0(o)1.
§ 150.0(o)1C:	Single Family Detached Dwelling Units. Single family detached dwelling units, and attached dwelling units not sharing ceilings or floors with other dwelling units, occupiable spaces, public garages, or commercial spaces must have mechanical ventilation airflow provided at rates determined by ASHRAE 62.2 Sections 4.1.1 and 4.1.2 and as specified in § 150.0(o)1C.
§ 150.0(o)1E:	Multifamily Attached Dwelling Units. Multifamily attached dwelling units must have mechanical ventilation airflow provided at rates in accordance with Equation 150.0-B and must be either a balanced system or continuous supply or continuous exhaust system. If a balanced system is not used, all units in the building must use the same system type and the dwelling-unit envelope leakage must be ≤ 0.3 CFM at 50 Pa (0.2 inch water) per square foot of dwelling unit envelope surface area and verified in accordance with Reference Residential Appendix RA3.8.
§ 150.0(o)1F:	Multifamily Building Central Ventilation Systems. Central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow for each dwelling unit served at a rate equal to or greater than the rate specified by Equation 150.0-B. All unit airflows must be within 20 percent of the unit with the lowest airflow rate as it relates to the individual unit's minimum required airflow rate needed for compliance.
§ 150.0(o)1G:	Kitchen Range Hoods. Kitchen range hoods must be rated for sound in accordance with Section 7.2 of ASHRAE 62.2.
§ 150.0(o)2:	Field Verification and Diagnostic Testing. Dwelling unit ventilation airflow must be verified in accordance with Reference Residential Appendix RA3.7. A kitchen range hood must be verified in accordance with Reference Residential Appendix RA3.7.4.3 to confirm it is rated by HVI to comply with the airflow rates and sound requirements as specified in Section 5 and 7.2 of ASHRAE 62.2.
Pool and Spa S	ystems and Equipment Measures:
§ 110.4(a):	Certification by Manufacturers. Any pool or spa heating system or equipment must be certified to have all of the following: a thermal efficiency that complies with the Appliance Efficiency Regulations; an on-off switch mounted outside of the heater that allows shutting off the heater without adjusting the thermostat setting; a permanent weatherproof plate or card with operating instructions; and must not use electric resistance heating.*
§ 110.4(b)1:	<b>Piping.</b> Any pool or spa heating system or equipment must be installed with at least 36 inches of pipe between the filter and the heater, or dedicated suction and return lines, or built-in or built-up connections to allow for future solar heating.
§ 110.4(b)2:	Covers. Outdoor pools or spas that have a heat pump or gas heater must have a cover.
§ 110.4(b)3:	<b>Directional Inlets and Time Switches for Pools.</b> Pools must have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.
§ 110.5:	Pilot Light. Natural gas pool and spa heaters must not have a continuously burning pilot light.
§ 150.0(p):	Pool Systems and Equipment Installation. Residential pool systems or equipment must meet the specified requirements for pump sizing, flow rate, piping, filters, and valves.*
Lighting Measu	res:
§ 110.9:	<b>Lighting Controls and Components.</b> All lighting control devices and systems, ballasts, and luminaires must meet the applicable requirements of § 110.9.*
§ 150.0(k)1A:	Luminaire Efficacy. All installed luminaires must meet the requirements in Table 150.0-A.
§ 150.0(k)1B:	Blank Electrical Boxes. The number of electrical boxes that are more than five feet above the finished floor and do not contain a luminaire or other device must be no greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor control, or fan speed control.
§ 150.0(k)1C:	Recessed Downlight Luminaires in Ceilings. Luminaires recessed into ceilings must meet all of the requirements for: insulation contact (IC) labeling; air leakage; sealing; maintenance; and socket and light source as described in § 150.0(k)1C.
§ 150.0(k)1D:	Electronic Ballasts for Fluorescent Lamps. Ballasts for fluorescent lamps rated 13 watts or greater must be electronic and must have an
§ 150.0(k)1E:	output frequency no less than 20 kHz.  Night Lights, Step Lights, and Path Lights. Night lights, step lights and path lights are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided they are rated to consume no more than 5 watts of power and emit no more than 150 lumens.
§ 150.0(k)1F:	Lighting Integral to Exhaust Fans. Lighting integral to exhaust fans (except when installed by the manufacturer in kitchen exhaust hoods) must meet the applicable requirements of § 150.0(k).*
§ 150.0(k)1G:	Screw based luminaires. Screw based luminaires must contain lamps that comply with Reference Joint Appendix JA8.*
§ 150.0(k)1H:	Light Sources in Enclosed or Recessed Luminaires. Lamps and other separable light sources that are not compliant with the JA8 elevated temperature requirements, including marking requirements, must not be installed in enclosed or recessed luminaires.
§ 150.0(k)1I:	Light Sources in Drawers, Cabinets, and Linen Closets. Light sources internal to drawers, cabinetry or linen closets are not required to comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
§ 150.0(k)1I: § 150.0(k)2A:	comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no
§ 150.0(k)2A:	comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.
	comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.  Interior Switches and Controls. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.
§ 150.0(k)2A: § 150.0(k)2B: § 150.0(k)2C:	comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.  Interior Switches and Controls. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.  Interior Switches and Controls. Exhaust fans must be controlled separately from lighting systems.*  Interior Switches and Controls. Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually
§ 150.0(k)2A: § 150.0(k)2B:	comply with Table 150.0-A or be controlled by vacancy sensors provided that they are rated to consume no more than 5 watts of power, emit no more than 150 lumens, and are equipped with controls that automatically turn the lighting off when the drawer, cabinet or linen closet is closed.  Interior Switches and Controls. All forward phase cut dimmers used with LED light sources must comply with NEMA SSL 7A.  Interior Switches and Controls. Exhaust fans must be controlled separately from lighting systems.*  Interior Switches and Controls. Lighting must have readily accessible wall-mounted controls that allow the lighting to be manually turned ON and OFF.*

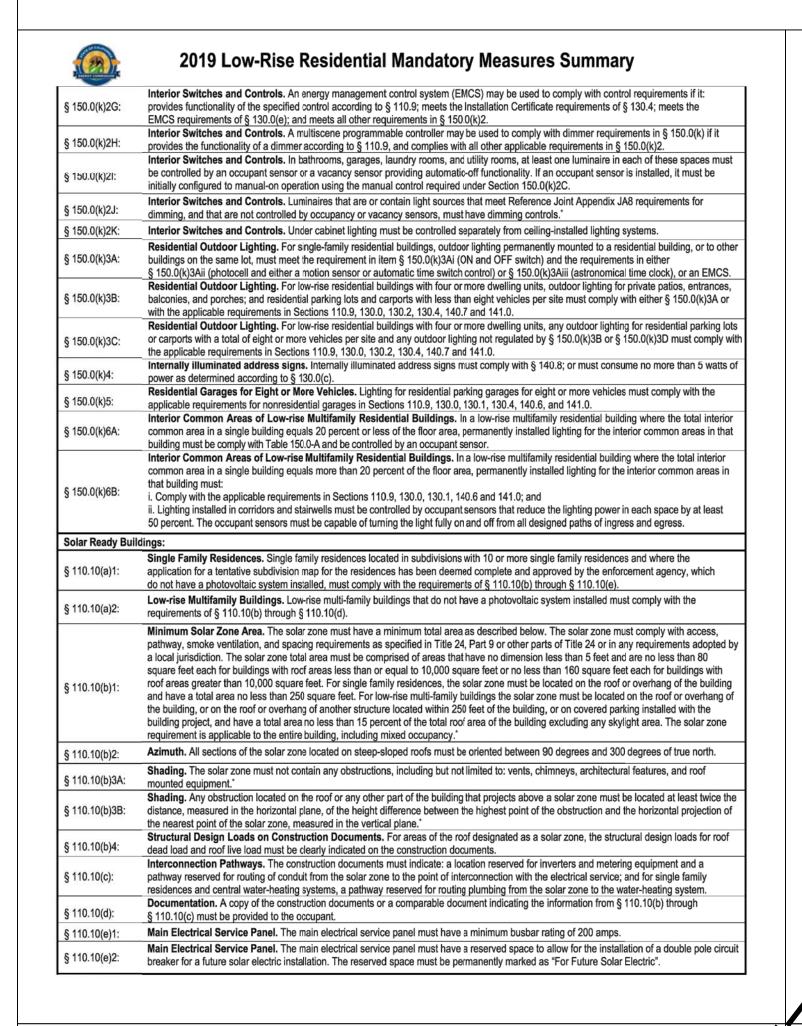
§ 150.0(k)2F: Interior Switches and Controls. Lighting controls must comply with the applicable requirements of § 110.9.

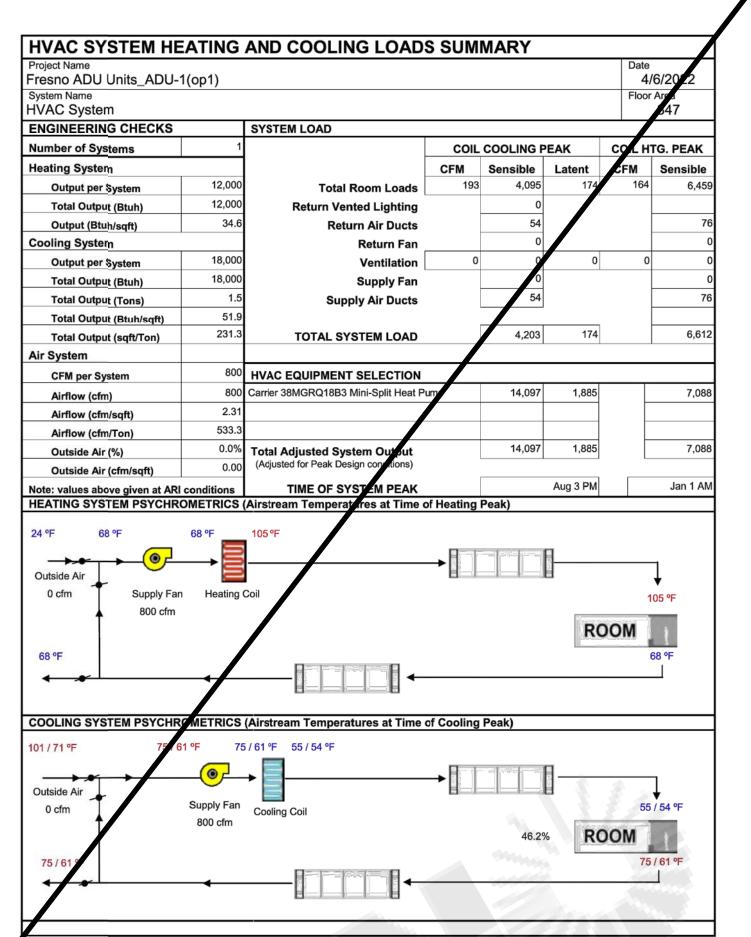
2019 Low-Rise Residential Mandatory Measures Summary

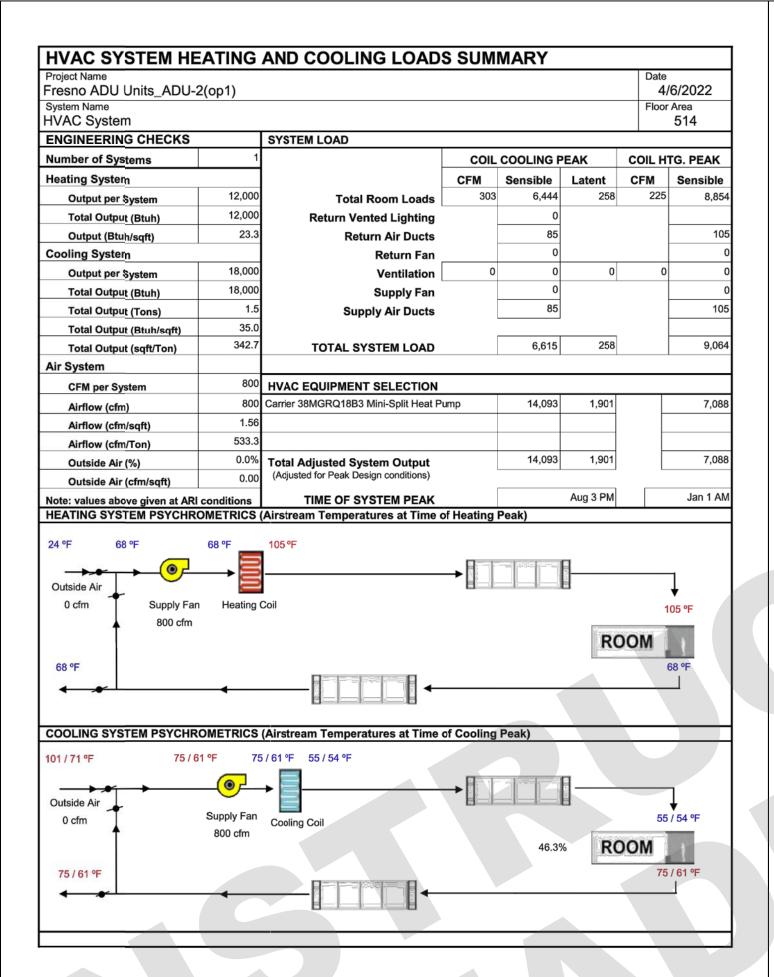
Requirements for Ventilation and Indoor Air Quality:

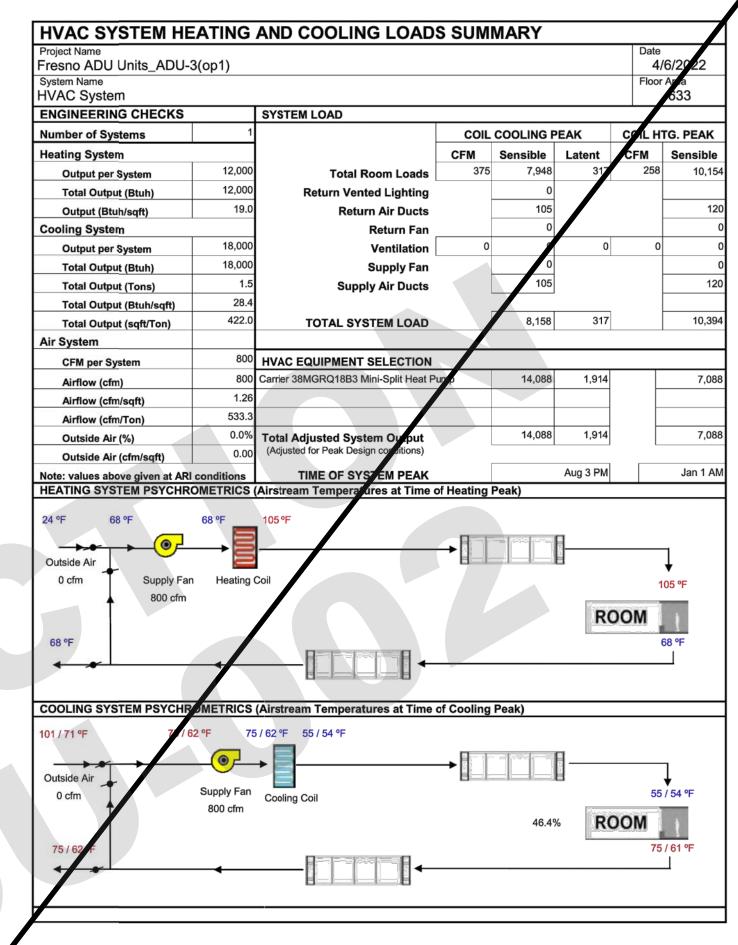


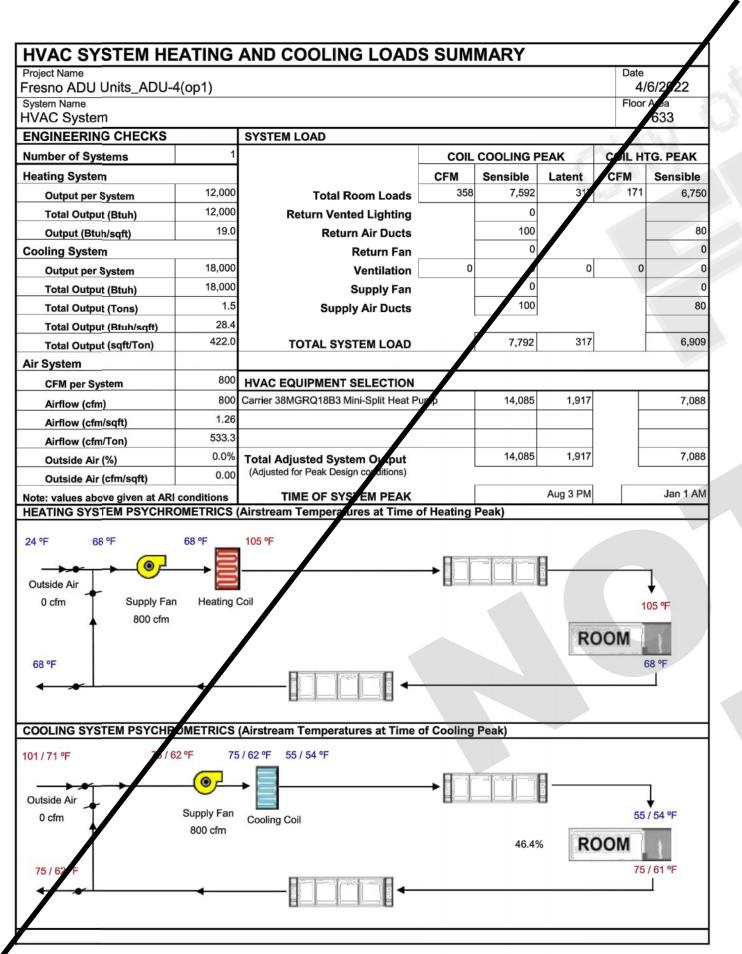
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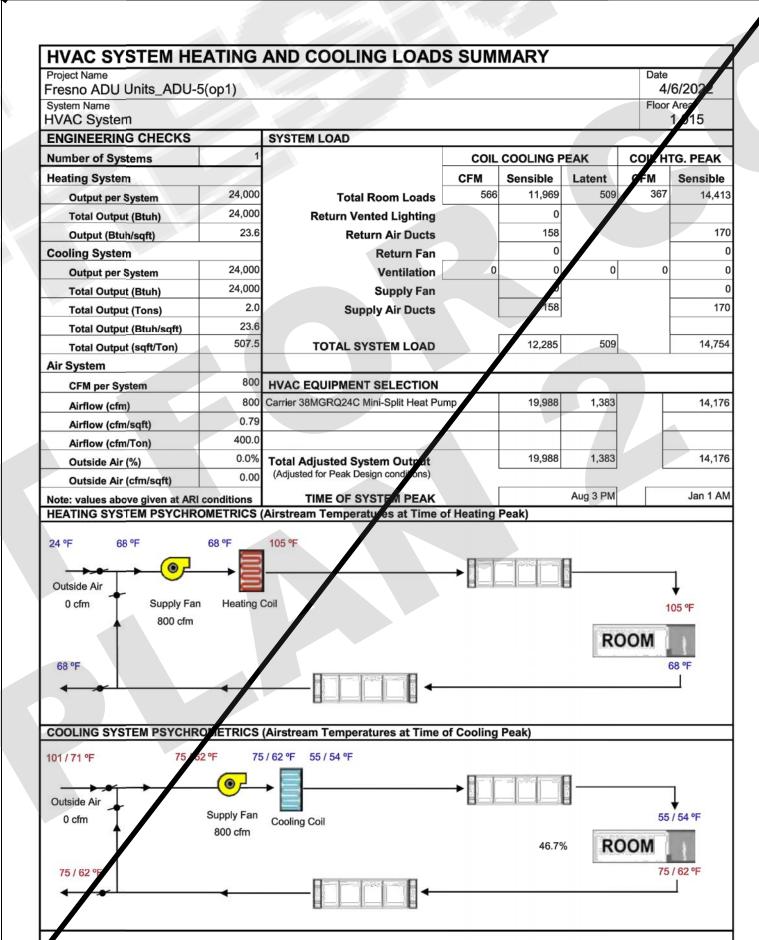


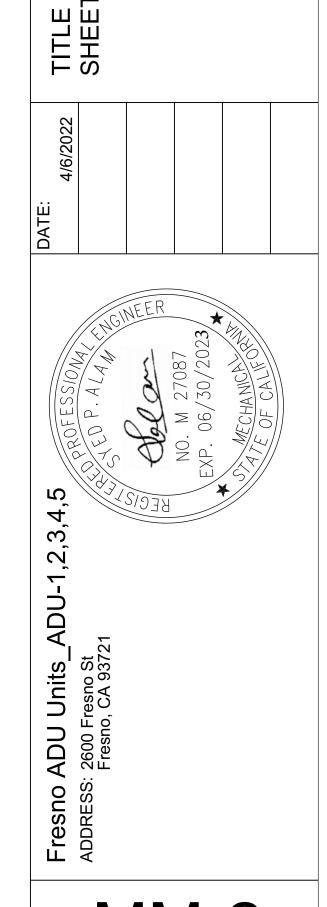












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# MECHANICAL SPECIFICATIONS

PROVIDE EQUIPMENT INDICATED ON THE DRAWINGS, AND AS REQUIRED FOR A COMPLETE FUNCTIONING SYSTEM.

DEFINITIONS: FURNISH MEANS TO SUPPLY AND DELIVER TO PROJECT SITE, READY FOR INSTALLATION. INSTALL MEANS TO PLACE IN POSITION AND MAKE CONNECTIONS FOR SERVICE OR USE. PROVIDE MEANS TO FURNISH AND INSTALL, COMPLETE AND READY FOR INTENDED USE.

WARRANTY: PROVIDE LABOR AND MATERIALS TO REPAIR OR REPLACE DEFECTIVE PARTS AND MATERIALS AS REQUIRED FOR ONE YEAR AFTER SUBSTANTIAL COMPLETION OR OWNER ACCEPTANCE OF THE COMPLETED PROJECT. PROVIDE A SEPARATE LINE ITEM DEDUCT AMOUNT ON THE PROPOSAL FORM TO DELETE WARRANTY SERVICE, AT THE OWNER'S OPTION.

PROVIDE OPERATION MANUALS, MAINTENANCE MANUALS AND SCHEMATICS FOR ALL MECHANICAL EQUIPMENT INSTALLED.

COORDINATION: COORDINATE WITH THE WORK OF OTHER SECTIONS, EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF THE OWNER, AND WITH THE CONSTRAINTS OF THE EXISTING CONDITIONS OF THE PROJECT SITE.

ROOF PENETRATIONS SHALL COMPLY WITH "SMACNA" AND "NRCA" STANDARDS, AND WITH THE REQUIREMENTS OF THE EXISTING ROOFING WARRANTY, IF APPLICABLE. DO NOT PERFORM ROOFING PENETRATIONS IN A MANNER WHICH WOULD VOID OR OTHERWISE LIMIT THE EXISTING ROOF WARRANTY.

DUCT DIMENSIONS: UNLESS OTHERWISE NOTED, DUCT DIMENSIONS ON THE DRAWINGS ARE INSIDE CLEAR DIMENSIONS.

SHEET METAL DUCTWORK: PROVIDE SHEET METAL DUCTWORK FABRICATED AND INSTALLED IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS, FOR 1" W.G. PRESSURE CLASS, SEAL CLASS "A". SHEET METAL SHALL BE GALVANIZED SHEET STEEL OF LOCK FORMING QUALITY, WITH G90 ZINC COATING. SHEET STEEL SHALL COMPLY WITH ASTM A653 STANDARD SPECIFICATION FOR STEEL SHEET METAL, ZINC COATED (GALVANIZED) OR ZINC-IRON ALLOY-COATED (GALVANNEALED) BY THE HOT DIP PROCESS, AND A924 STANDARD SPECIFICATION FOR GENERAL REQUIREMENTS FOR SHEET, METALLIC-COATED BY THE HOT DIP PROCESS. ALL ANGLE IRON USED FOR SUPPORT SHALL BE GALVANIZED. CONNECTIONS TO WALLS OR FLOOR SHALL BE AIR TIGHT WITH ANGLE IRON AND CAULKING. SEAL ALL DUCT SEAMS, TRANSVERSE AND LONGITUDINAL, AIR TIGHT. PROVIDE TURNING VANES AT ALL 90° ELBOWS.

TRAPEZE DUCT HANGERS: PROVIDE MINIMUM 1" X 2" X 1" X 18 GAUGE CHANNELS WITH MINIMUM 1" X 18 GAUGE STRAPS TO STRUCTURAL SUPPORT.

ROUND SHEET METAL DUCT: PROVIDE SPIRAL SEAM (ALL SIZES) OR SNAP LOCK (DUCT SIZES UP TO 10") GALVANIZED STEEL COMPLYING WITH SMACNA STANDARDS. SPIRAL SEAM DUCTWORK SHALL HAVE SMACNA SEAM TYPE RL-1.

FIBER GLASS DUCT BOARD IS AN ACCEPTABLE ALTERNATIVE IF APPROVED BY OWNER AND THE LOCAL BUILDING CODE OFFICIAL. PRODUCT AND INSTALLATION MUST MEET NAIMA STANDARDS AND OTHER APPLICABLE CODES AND REGULATIONS.

EXPOSED DUCTWORK: EXPOSED DUCTWORK SHALL BE CLEANED OF DEBRIS AND OIL, HEN WIPED DOWN WITH VINEGAR OR OTHER SURFACE PREPARING CHEMICAL TO PREPARE DUCT FOR PAINT.

DUCT SEALANT: PROVIDE POLYMERIC RUBBER TYPE SEALANT FOR USE ON BOTH INTERIOR LOCATED DUCTWORK AND DUCTWORK EXPOSED TO OUTDOOR CONDITIONS. SEALER SHALL HAVE HIGH BONDING STRENGTH FOR SURE, FIRST TIME SEALING OF JOINTS IN LOW, MEDIUM, AND HIGH PRESSURE DUCT SYSTEMS. SEALER SHALL BE HIGH IN SOLID CONTENT. PROVIDE A TWO PART TAPE SEALING SYSTEM, CONSISTING OF WOVEN FIBER TAPE IMPREGNATED WITH A GYPSUM MINERAL COMPOUND, AND A MODIFIED ACRYLIC/SILICONE ACTIVATOR THAT REACTS EXOTHERMICALLY WITH THE TAPE. TWO PART TAPE SEALING SYSTEM MUST BE RATED FOR BOTH INDOOR AND OUTDOOR APPLICATION. TAPE SHALL NOT CONTAIN ASBESTOS.

DUCT INSULATION: MATERIAL FOR SUPPLY AND RETURN AIR DUCT ABOVE CEILING INSIDE THE BUILDING SHALL HAVE THE EQUIVALENT THERMAL RESISTANCE OF MINIMUM R-6. THE REQUIRED R VALUES ARE FOR INSTALLED INSULATION WITH 25% COMPRESSION AT THE CORNERS. PROVIDE PINS AND WASHERS IN ACCORDANCE WITH SMACNA REQUIREMENTS AND AS REQUIRED TO PREVENT INSULATION FROM SAGGING. PROVIDE ADEQUATE INSULATION AT THE SUPPLY AIR DIFFUSERS TO PREVENT CONDENSATION.

FLEXIBLE DUCT: UL #181 LISTED, CLASS 1, AND CONTAIN A 0.1 PERM RATED POLYETHYLENE INNER LINER, WITH R-8 FIBERGLASS INSULATION. FLEXIBLE DUCTS SHALL BE SECURED TO RIGID SHEET METAL COLLARS AND AIR DIFFUSERS WITH NYLON TIES OR STAINLESS STEEL WORM GEAR STRAPS. SEAL ALL CONNECTIONS AND JOINTS AIRTIGHT. SUPPORT FLEXIBLE DUCTS FROM THE BUILDINGS STRUCTURE WITH MINIMUM 1" WIDE, 18 GAUGE, GALVANIZED STEEL STRAP AT MAXIMUM 4'-0" CENTERS. PROVIDE 4" WIDE SHEET METAL SADDLES AT EACH SUPPORT EACH STRAP. SAG OF FLEXIBLE DUCT BETWEEN HANGERS SHALL NOT EXCEED 1/2" PER FOOT OF SUPPORT SPACING. RADIUS FOR TURNS OF FLEXIBLE DUCTS SHALL BE A MINIMUM OF ONE DUCT DIAMETER. FLEXIBLE DUCT RUNS SHALL NOT EXCEED 10'-0" IN LENGTH AND SHALL BE THE SAME SIZE AS THE DIFFUSER NECK CONNECTION.

ROUND VOLUME DAMPERS: PROVIDE MINIMUM 20 GAUGE GALVANIZED STEEL FRAME AND BLADES, MINIMUM 3/8" SQUARE STEEL AXLE, MOLDED SYNTHETIC BEARINGS, WITH LOCKING POSITION REGULATOR. REGULATOR SHALL BE POSITIONED WITH SHEET METAL BRACKET BEYOND DUCT COVERING. WHERE POSITIONING REGULATOR IS NOT ACCESSIBLE, PROVIDE COUPLING AND EXTENSION ROD WITH REGULATOR FOR CEILING OR WALL INSTALLATION, AS REQUIRED.

RECTANGULAR VOLUME DAMPERS: PROVIDE MINIMUM 16 GAUGE GALVANIZED STEEL CHANNEL FRAME, 16 GAUGE GALVANIZED STEEL BLADES, MINIMUM ½" HEXAGONAL AXLE, BOLDED SYNTHETIC BEARINGS, WITH 3/8" SQUARE PLATED STEEL CONTROL SHAFT. LINKAGES SHALL BE CONCEALED IN THE FRAME. OPERATING SHAFT SHALL EXTEND BEYOND FRAME AND DUCT TO A LOCKING QUADRANT WITH ADJUSTABLE LEVER. MAXIMUM BLADE WIDTH SHALL NOT EXCEED 6".

DUCT TURNING VANES: PROVIDE FABRICATED TURNING VANES AND VANE RUNNERS, CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS". PROVIDE TURNING VANES CONSTRUCTED OF CURVED BLADES, SUPPORTED WITH BARS PERPENDICULAR TO BLADES, AND SET INTO SIDE STRIPS SUITABLE FOR MOUNTING IN DUCTWORK. FOLLOW SMACNA GUIDELINES FOR SPACING SUPPORT, AND CONSTRUCTION. ALL BLADES SHALL BE DOUBLE THICKNESS AIRFOIL TYPE.

FLEXIBLE DUCT CONNECTORS: PROVIDE U.L. LABELED 30 OUNCE NEOPRENE COATED FIBERGLASS FABRIC DUCT CONNECTORS.

DUCT ACCESS DOORS: PROVIDE HINGED ACCESS DOORS IN DUCTWORK WHERE REQUIRED FOR ACCESS TO EQUIPMENT. PROVIDE INSULATED ACCESS DOORS FOR INSULATED DUCTWORK. CONSTRUCT OF SAME OR THICKER GAUGE SHEET METAL AS DUCT IN WHICH IT IS INSTALLED. PROVIDE FLUSH FRAMES FOR UN-INSULATED DUCTS, AND EXTENDED FRAMES FOR EXTERNALLY INSULATED DUCTS. PROVIDE CONTINUOUS HINGE ON ONE SIDE, WITH ONE HANDLE-TYPE LATCH FOR ACCESS DOORS 12" HIGH AND SMALLER, AND TWO HANDLE-TYPE LATCHES FOR LARGER ACCESS DOORS.

HVAC CONTROL SYSTEM: PROVIDE ALL THE NECESSARY CONTROLS AND CONTROL WIRING IN CONDUIT COMPATIBLE TO SYSTEMS SHOWN ON EQUIPMENT SCHEDULE M2.0.

PROGRAMMABLE THERMOSTAT FOR EACH SYSTEM SHALL ENABLE THE SUPPLY FAN AND CYCLE THE COOLING AND HEATING STAGES TO MAINTAIN SPACE SET-POINT. SUPPLY FAN RUNS CONTINUOUSLY DURING THE OCCUPIED MODE.

EACH THERMOSTAT SHALL HAVE A DEAD BAND OF AT LEAST 5 DEGREES (ADJ) WITHIN WHICH THE SUPPLY OF HEATING AND COOLING IS SHUT OFF,

EACH THERMOSTAT SHALL HAVE SETBACK AND SET-UP CAPABILITY DURING THE UNOCCUPIED MODE. FOR SETBACK, THE HEATING SHALL RESTART AND TEMPORARILY OPERATE ACCORDING TO A SET-POINT ADJUSTABLE DOWN TO 55 DEGREES. FOR SET-UP, THE COOLING SHALL RESTART AND TEMPORARILY OPERATE ACCORDING TO A SET-POINT ADJUSTABLE UP TO 85 DEGREES OR TO PREVENT HIGH SPACE HUMIDITY LEVELS.

EACH SYSTEM SHALL BE PROVIDED WITH A MOTORIZED OUTSIDE AIR DAMPER THAT WILL AUTOMATICALLY SHUT WHEN THE SYSTEM OR SPACES SERVED ARE NOT IN USE. VENTILATION OUTSIDE AIR DAMPERS SHALL BE CAPABLE OF AUTOMATICALLY CLOSING DURING PREOCCUPANCY BUILDING WARM-UP, COOL DOWN, AND SETBACK, EXCEPT WHEN VENTILATION REDUCES ENERGY COSTS (e.g., NIGHT PURGE) OR WHEN VENTILATION MUST BE SUPPLIED TO MEET CODE REQUIREMENTS.

COMMISSIONING/VERIFICATION: HVAC CONTROL SYSTEM SHALL BE TESTED TO ENSURE THAT CONTROL ELEMENTS ARE CALIBRATED, ADJUSTED, AND IN PROPER WORKING CONDITION, AND THAT THE SYSTEM MEETS THE DESIGN REQUIREMENTS.

TEST AND BALANCE: CONTRACT DIRECTLY A THIRD PARTY TO PROVIDE TEST AND BALANCE OF THE HVAC SYSTEM. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR SCHEDULING. TEST AND ADJUST ALL MECHANICAL SYSTEM AND EQUIPMENT TO ASSURE PROPER BALANCE AND OPERATION. PERFORM TESTS IN ACCORDANCE WITH NEBB PROCEDURAL STANDARDS-1999 OR AABC 2002, AND ASHRAE STANDARD 111. ELIMINATE NOISE AND VIBRATION, AND ASSURE PROPER FUNCTION OF CONTROLS. SUBMIT COMPLETED TEST AND BALANCE REPORT TO OWNER'S REPRESENTATIVE. BALANCING CONTRACTOR SHALL BE INDEPENDENT AND CERTIFIED WITH NEBB OR AABC. BALANCE ALL SYSTEMS WITHIN 5% OF AIR FLOW INDICATED ON DRAWINGS, AND REPORT ALL DISCREPANCIES TO THE HVAC CONTRACTOR FOR CORRECTION. MARK FINAL BALANCE POSITIONS ON DAMPERS WITH PERMANENT MARKER.

COMPLETION REQUIREMENTS: THE CONTRACTOR SHALL PROVIDE, WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE, RECORD DRAWINGS AND AN OPERATING AND MAINTENANCE MANUAL TO THE BUILDING OWNER OR THE DESIGNATED REPRESENTATIVE OF THE OWNER.

THE RECORD DRAWING SHALL BE OF THE ACTUAL INSTALLATION AND INCLUDE AS A MINIMUM THE LOCATION AND PERFORMANCE DATA ON EACH PIECE OF EQUIPMENT, GENERAL CONFIGURATION OF DUCT AND PIPE DISTRIBUTION SYSTEM INCLUDING SIZES, AND THE TERMINAL AIR OR WATER DESIGN FLOW RATES.

THE OPERATING AND MAINTENANCE MANUALS SHALL BE IN ACCORDANCE WITH INDUSTRY-ACCEPTED STANDARDS AND SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING; (A) SUBMITTAL DATA STATING EQUIPMENT SIZE AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE; (B) OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE, EXCEPT EQUIPMENT NOT FURNISHED AS PART OF THE PROJECT. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED; (C) NAMES AND ADDRESSES OF AT LEAST ONE SERVICE AGENCY; (D) HVAC CONTROLS SYSTEMS MAINTENANCE AND CALIBRATION INFORMATION, INCLUDING WIRING DIAGRAMS, SCHEMATICS, AND CONTROL SYSTEM SEQUENCE DESCRIPTIONS. DESIRED OR FIELD-DETERMINED SET-PIONTS SHALL BE PERMANENTLY RECORDED ON CONTROL DRAWINGS AT CONTROL DEVICES OR, FOR DIGITAL CONTROL SYSTEMS, IN PROGRAMMING COMMENTS; (E) A COMPLETE NARRATIVE OF HOW EACH SYSTEM EACH SYSTEM IS INTENDED TO OPERATE, INCLUDING SET-POINTS.

## HVAC GENERAL NOTES

- i . The intent of these plans and specifications is to include all labor, equipment, materials, AND SERVICES NECESSARY TO FURNISH, INSTALL, TEST, AND ADJUST A COMPLETE WORKABLE HEATING, VENTILATION, AND AIR CONDITIONING SYSTEM AS SHOWN, PRESCRIBED, OR REASONABLY IMPLIED BUT NOT LIMITED TO THAT EXPLICITLY INDICATED IN THE CONTRACT DOCUMENTS, BUT NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE INTENT THEREOF.
- 2. THE ENTIRE INSTALLATION SHALL CONFORM TO THE APPLICABLE CODES AND REGULATIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION. IN THE EVENT OF CONFLICT BETWEEN SPECIFICATIONS, CODES, AND REGULATIONS, THE MORE RESTRICTIVE SHALL APPLY.
- 3. DRAWINGS FOR HVAC WORK ARE DIAGRAMATIC SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENT, REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS. PROVIDE ALL DUCTWORK, MATERIALS, CONNECTIONS, ACCESSORIES, FITTINGS, OFFSETS, TRANSITIONS, DAMPERS AS REQUIRED FOR A COMPLETE WORKABLE SYSTEM.
- 4. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND APPROVED LISTING. ALL EQUIPMENT, PIPING AND SUPPORTS SHALL BE RESTRAINED IN ACCORDANCE WITH THE LATEST EDITION OF THE "GUIDLINES FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS AND PLUMBING PIPING SYSTEMS" BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA). ALL EQUIPMENT SHALL BE ANCHORED TO RESIST THE LATERAL FORCE REQUIREMENTS OF CHAPTER 16 OF THE 2012 INTERNATIONAL BUILDING CODE.
- 5. COORDINATE THE INSTALLATION OF THE HVAC SYSTEM WITH ALL OTHER TRADES PRIOR TO FABRICATION OR INSTALLATION. COORDINATE THE LOCATIONS OF PENETRATIONS AND FINAL LOCATION OF ALL EQUIPMENT WITH THE GENERAL CONTRACTOR. PROVIDE EQUIPMENT WEIGHTS, EQUIPMENT DIMENSIONS, PLATFORM SIZES & LOCATIONS, CURB SIZES & LOCATIONS, CONCRETE PAD SIZES AND LOCATIONS AST REQUIRED. COORDINATE LOCATIONS OF GAS & CONDENSATE LINES WITH PLUMBING CONTRACTOR. COORDINTAE LOCATIONS OF POWER, DISCONNECTS, AND CONTROL CONDUIT WITH THE ELECTICAL CONTRACTOR. COORDINATE LOCATIONS OF ALL DIFFUSERS, REGISTERS, AND GRILLES WITH ARCHITECTURAL PLANS, ELECTRICAL LIGHTING PLANS AND ARCHITECTURAL ELEVATIONS.
- 6. DETAILS FOR EQUIPMENT PADS, PLATFORMS, AND FLASHINGS SHALL BE AS INDICATED BY THE ARCHITECTURAL/STRUCTURAL/CIVIL DRAWINGS, UNLESS NOTED OTHERWISE.
- 7. ALL EQUIPMENT, DUCTS, PIPING, SUPPORTS, AND OTHER DEVICES OUTSIDE OF THE BUILDING OR EXPOSED TO WEATHER, SHALL BE COMPLETELY WEATHER-PROOFED.
- 8. OUTSIDE AIR INTAKES SHALL BE AT LEAST 10 FT. AWAY OR 3 FT. BELOW ANY VENT OR EXHAUST
- 9. ALL DUCT SIZES ARE CLEAR INSIDE DIMENSIONS. DUCTWORK SHALL BE CONSTRUCTED, ERECTED, INSULATED AND TESTED IN ACCORDANCE CHAPTER 6 OF THE 2012 INTERNATIONAL MECHANICAL
- 10. ALL EXHAUST FANS SHALL BE EQUIPED WITH A BACK DRAFT DAMPER.
- 11. DUCT AND AIR TRANSFER PENETRATIONS THRU BUILDING ASSEMBLIES REQUIRING PROTECTION SHALL BE PROTECTED WITH FIRE DAMPERS, SMOKE DAMPERS, COMBINATION SMOKE/FIRE DAMPERS AND CEILING RADIATION DAMPERS IN ACCORDANCE WITH SECTION 607 OF THE INTERNATIONAL MECHANICIAL CODE. DUCTS NOT REQUIRING DAMPERS SHALL COMPLY WITH SECTION 714 & 717 OF THE 2019 CALIFORNIA BUILDING CODE.
- 12. INSTALL SMOKED DETECTORS AND PROVIDE FOR SMOKE DETECTION AND AUTOMATIC SHUT-OFF OF ALL AIR HANDLING EQUIPMENT IN ACCORDANCE WITH SECTION 606 OF THE 2019 CALIFORNIA
- 13. UNLESS NOTED OTHERWISE, ALL LINE VOLTAGE WIRING, CONDUIT, FINAL CONNECTIONS, DISCONNECTS, STARTERS, AND OVER CURRENT PROTECTION DEVICES SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR AS INDICATED ON THESE MECHANICAL DRAWINGS AND/OR ELECTRICAL DRAWINGS AND/OR ELECTRICAL SECTION OF THE SPECIFICATIONS.
- 14. INSTALL ALL LOW VOLTAGE HVAC CONTROL WIRE AND DEVICES PER PLAN. ALL WIRE SHALL BE IN CONDUIT PROVIDED AND INSTALLED BY THE ELECTICAL CONTRACTOR UNLESS NOTEDED OTHERWISE.
- 15. PROVIDE OWNER WITH THREE COPIES OF A CERTIFIED AIR BALANCE REPORT PREPARED IN BY A THIRD PARTY CERTIFIED BY THE AABC OR NEBB. TEST, ADJUST AND BALANCE THE HVAC SYSTEM IN ACCORDANCE WITH AABC OR NEBB PROCEDURES. PROVIDE START-UP/TEST REPORTS FOR ALL AIR HANDLING EQUIPMENT, FANS, AND REFRIGERATION EQUIPMENT. TEST AND VERIFY PROPER OPERATION OF ALL MAKE-UP AIR/EXHAUST AIR INTERLOCK SYSTEMS AND THIER SEQUENCES OF OPERATION. BALANCE ALL AIR FLOWS WITHIN 5% OF DESIGN VALUES. PERMANENTLY MARK BALANCE POSITION OF ALL REGULATING DEVICES.
- 16. PROVIDE OWNER WITH THREE SETS OF AS-BUILT PLANS AND OPERATIONS AND MAINTENANCE MANUALS. CLEARLY IDENTIFY ALL EQUIPMENT WITH PERMANENT PLASTIC OR METAL LABELS/TAGS (PEN MARKING NOT ACCEPTABLE).
- 17. PROVIDE ONE YEAR WARRANTY ON ALL LABOR, PARTS AND MATERIALS.
- 18. ANY CHANGE OR DEVIATION FROM THESE PLANS OR SPECIFICATIONS SHALL REQUIRE THE WRITTEN APPROVAL OF THE ENGINEER PRIOR TO COMMENCEMENT OF SUCH WORK.

# 19.0

- a) DUCTS FOR DEMAND CONTROLLED VENTILATION SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE FAN MANUFACTURER'S INSTALLATION INSTRUCTIONS, THE PROVISIONS ASHRAE 62.2, TABLE 5.3, OR THE AIRFLOW SHALL BE MEASURED AS REQUIRED BY AND IN COMPLIANCE WITH ASHRAE 62.2, 5.4.
- b) DUCTS FOR KITCHEN COOKTOPS OR RANGES SHALL BE SHOWN OF METAL WITH A SMOOTH INTERIOR. [CMC 504.3].
- 1) IDENTIFY THE DETAILED REQUIREMENTS OF CMC DRYER DUCTS. SPECIFY--
- a) DUCTS FOR DOMESTIC CLOTHES DRYERS SHALL BE INSTALLED IN ACCORDANCE WITH CMC 504.0.
- b) DUCTS FOR DOMESTIC CLOTHES DRYERS SHALL BE RIGID METALLIC DUCTS WITH A MINIMUM MILL THICKNESS OF 16 (0.016-INCH), SHALL HAVE A MINIMUM 4-INCH DIAMETER AND A SMOOTH INTERIOR. THE COMBINED HORIZONTAL AND VERTICAL LENGTH OF THE DUCTS OF THE DUCTS SHALL BE 14-FEET, WHICH SHALL BE REDUCED BY 2-FEET FOR EVERY 90-DEGREE ELBOW IN EXCESS OF TWO ELBOWS.
- c) LISTED CLOTHES DRYER TRANSITION DUCTS NOT MORE THAN 6-FEET IN LENGTH SHALL BE PERMITTED TO CONNECT THE DRYER TO THE EXHAUST DUCTS AS LONG AS THEY ARE NOT CONCEALED WITHIN CONSTRUCTION, AND THEY ARE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

LEGEND					
AxB		DUCT WORK (WIDTHXDEPTH)			
AxB		LINED DUCT WORK (WIDTHXDEPTH DIMENSIONS ARE FOR I.D.)			
		SUPPLY DUCT, SECTION			
		RETURN DUCT, SECTION			
		exhaust duct, section			
-R.ORD		RISE OR DROP IN DIRECTION OF AIR FLOW			
	FLEX. CONN.	FLEXIBLE CONNECTION			
		DUCT TRANSITION, ROUND AND RECTANGULAR			
		SPLITTER DAMPER			
<u> </u>		EXTRACTOR AT BRANCH DUCT			
		TURNING VANES			
—\\\\\\\		FLEXIBLE DUCT			
<b>&gt;</b>		SINGLE LINE DUCT WORK			
	AVD	AUTOMATIC VOLUME DAMPER			
	MVD	MANUAL VOLUME DAMPER			
	BDD	BACKDRAFT DAMPER			
	MD	MODULATING DAMPER			
	AFD	AUTOMATIC FIRE DAMPER			
	AD	ACCESS DOOR			
<b>→</b>	SD	SUPPLY DIFFUSER			
	RD	RETURN DIFFUSER			
	ER	EXHAUST REGISTER			
	SWR	SIDE WALL SUPPLY REGISTER			
	SWE	SIDE WALL RETURN OR EXHAUST			
	LD	LINEAR DIFFUSER			
— D.L. —	DL	DOOR LOUVER			
— U.C. —	UC	UNDER CUT DOOR			
	VAV	VARIABLE AIR VOLUME			
(T)		THERMOSTAT			
S		DUCT SMOKE DECTECTOR			

# SPECIAL NOTICE TO CONTRACTORS

- ALL CONTRACTORS (GENERAL CONTRACTOR AND SUB-CONTRACTORS) BIDDING THIS PROJECT ARE REQUIRED TO VISIT THE JOB SITE AND VERIFY THE EXISTING CONDITIONS PRIOR TO SUBMITTING THEIR BID. CONTRACTORS ARE TO CAREFULLY REVIEW ALL CONSTRUCTION DOCUMENTS AND NOTE ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND THE CONDITIONS OBSERVED AT THE JOB SITE PRIOR TO SUBMISSION OF ANY BID. THE BUILDING OWNER REPRESNENTATIVE LISTED BELOW MAY BE CONTACTED FOR ACCESS TO THE JOB SITE.
- 2. CONTRACTORS ARE RESPONSIBLE FOR VERIFYING THE LOCATION AND CONDITION OF ALL POINTS OF CONNECTION, LOCATION AND CONDITION OF ALL BUILDING (ROOF/FLOOR/CEILING) PENETRATIONS, LOCATION AND CONDITION OF ALL UTILITIES AND BUILDING SYSTEMS INCLUDING, BUT NOT LIMITED TO, GAS, WATER, SEWER, VENT, ELECTRICAL, BUILDING MECHANICAL SYSTEMS, DUCT CONNECTIONS, EXHAUST/OUTSIDE AIR CONNECTIONS, SECURITY, FIRE ALARM, DATA, AND PHONE PRIOR TO SUBMISSION OF THEIR BID.
- 3. ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND THE CONDITIONS OBSERVED SHALL BE BROUGHT TO THE ATTENTION, IN WRITING, TO THE ARCHITECT AND/OR ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
- 4. NO WORK SHALL BE DONE ON ANY PART OF THE BUILDING BEYOND THE POINT INDICATED IN EACH SUCCESSIVE INSPECTION WITHOUT FIRST OBTAINING THE WRITTEN APPROVAL OF THE CODE OFFICIAL. NO CONSTRUCTION SHALL BE CONCEALED WITHOUT BEING INSPECTED AND APPROVED.

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CITY OF FRESNO CALIFORNIA

#### CONFIDENTIALITY STATEMENT:

ALL DRAWINGS AND WRITTEN MATERIALS

APPEARING HEREIN CONSTITUTE THE

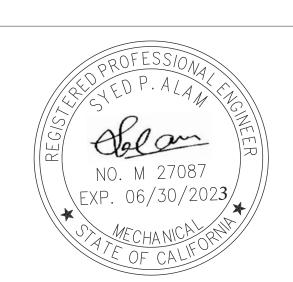
ORIGINAL AND UNPUBLISHED WORK OF THE

DESIGNER AND THE SAME MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT

CONSENT OF THE DESIGNER.

#### NOTES:

1. ALL DIMENSIONS HEREIN ARE IN IMPERIAL UNITS UNLESS STATED OTHERWISE. 2. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT DESIGNER, ENGINEER OR SPECIALIST DRAWINGS AND SPECIFICATIONS. 3. THE CONTRACTOR MUST CHECK ALL DIMENSION AT SITE BEFORE COMMENCING WORK. 4. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY TEMPORARY SUPPORT TO THE BUILDING AND ANY ADJACENT STRUCTURES.



REV. NI	DESCRIPTION	DATE	ВҮ
02	FOR APPROVAL	06.22	MN
01	FOR APPROVAL	03.22	MN
00	FOR APPROVAL	12.21	MN

PROJECT:

ADU PROGRAM

MECHANICAL SPECS. LEGENDS & SYMBOLS

PROJ. NO. PROJ. ENGR. | SCALE @ 24X36: 2104 DRAWING NO. REV.

M - 0.00

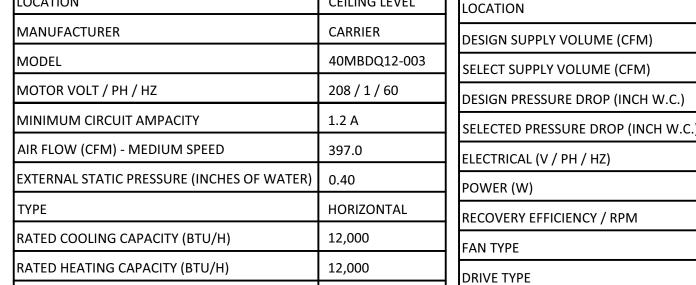
#### SCHEDULE No. 1 HEAT PUMP - OUTDOOR UNIT

SERVING ADU-02  MANUFACTURER CARRIER  OUTDOOR MODEL 38MGRQ18B3  SEER 22.5  EER 12.5  MOTOR VOLT / PH / HZ 208/230 / 1 / 60  MINIMUM CIRCUIT AMPACITY 18 A  MAX OVERCURRENT DEVICE 25 A  COOLING / HEATING CAPACITY (BTU/H) 18,000 / 19,000		
MANUFACTURER  OUTDOOR MODEL  SEER  22.5  EER  12.5  MOTOR VOLT / PH / HZ  MINIMUM CIRCUIT AMPACITY  MAX OVERCURRENT DEVICE  COOLING / HEATING CAPACITY (BTU/H)  CARRIER  28MGRQ18B3  22.5  12.5  12.5  12.5  12.5  12.5  18.4  18.000 / 19,000	TAG	OU-02
OUTDOOR MODEL  SEER  22.5  EER  12.5  MOTOR VOLT / PH / HZ  MINIMUM CIRCUIT AMPACITY  18 A  MAX OVERCURRENT DEVICE  COOLING / HEATING CAPACITY (BTU/H)  18,000 / 19,000	SERVING	ADU-02
SEER 22.5  EER 12.5  MOTOR VOLT / PH / HZ 208/230 / 1 / 60  MINIMUM CIRCUIT AMPACITY 18 A  MAX OVERCURRENT DEVICE 25 A  COOLING / HEATING CAPACITY (BTU/H) 18,000 / 19,000	MANUFACTURER	CARRIER
EER 12.5  MOTOR VOLT / PH / HZ 208/230 / 1 / 60  MINIMUM CIRCUIT AMPACITY 18 A  MAX OVERCURRENT DEVICE 25 A  COOLING / HEATING CAPACITY (BTU/H) 18,000 / 19,000	OUTDOOR MODEL	38MGRQ18B3
MOTOR VOLT / PH / HZ  208/230 / 1 / 60  MINIMUM CIRCUIT AMPACITY  18 A  MAX OVERCURRENT DEVICE  25 A  COOLING / HEATING CAPACITY (BTU/H)  18,000 / 19,000	SEER	22.5
MINIMUM CIRCUIT AMPACITY  18 A  MAX OVERCURRENT DEVICE  25 A  COOLING / HEATING CAPACITY (BTU/H)  18,000 / 19,000	EER	12.5
MAX OVERCURRENT DEVICE 25 A  COOLING / HEATING CAPACITY (BTU/H) 18,000 / 19,000	MOTOR VOLT / PH / HZ	208/230 / 1 / 60
COOLING / HEATING CAPACITY (BTU/H) 18,000 / 19,000	MINIMUM CIRCUIT AMPACITY	18 A
	MAX OVERCURRENT DEVICE	25 A
DIMENSION (W x H x D) INCHES 37 x 28 x 14.5	COOLING / HEATING CAPACITY (BTU/H)	18,000 / 19,000
	DIMENSION (W x H x D) INCHES	37 x 28 x 14.5

#### SCHEDULE No. 2

		EXHAUST FAN SCHEDULE
TAG	IU-02	TAG
LOCATION	CEILING LEVEL	LOCATION
MANUFACTURER	CARRIER	DESIGN SUPPLY VOLUME (C
MODEL	40MBDQ12-003	SELECT SUPPLY VOLUME (CF
MOTOR VOLT / PH / HZ	208 / 1 / 60	DESIGN PRESSURE DROP (IN
MINIMUM CIRCUIT AMPACITY	1.2 A	SELECTED PRESSURE DROP (
AIR FLOW (CFM) - MEDIUM SPEED	397.0	ELECTRICAL (V / PH / HZ)
EXTERNAL STATIC PRESSURE (INCHES OF WATER)	0.40	POWER (W)
ТҮРЕ	HORIZONTAL	RECOVERY EFFICIENCY / RPM
RATED COOLING CAPACITY (BTU/H)	12,000	FAN TYPE
RATED HEATING CAPACITY (BTU/H)	12,000	DRIVE TYPE
DIMENSION (W x H x D) INCHES	28 x 8 x 20	MANUFACTURER
WEIGHT (Lbs)	44.0	MADE

# Energy Standards (Ventilation for Indoor Air Quality) **Building Ventilation System**



# SCHEDULE No. 4

GRILLE	GRILLES, REGISTERS AND DIFFUSERS SCHEDULE							
TYPE	SERVICE	MFR AND MODEL NO	VOLUME DAMPER	FINISH	FRAME AND BORDER TYPE	MATERIAL	DESCRIPTION	
ER	EXHAUST REGISTER	TITUS 350RS	OPPOSED BLADE DAMPER	WHITE ENAMEL	NOTE 1	STEEL	35° FIXED DEFLECTION REGISTER WITH BLADES PARALLEL TO SHORT DIMENSION 3/4° SPACING	
R	RETURN GRILLE	TITUS 350R		WHITE ENAMEL	NOTE 1	STEEL	35° FIXED DEFLECTION GRILLE WITH BLADES IN HORIZONTAL POSITION 3/4° SPACING	
SG	SUPPLY GRILLE	TITUS 300RS		WHITE ENAMEL	NOTE 1	STEEL	DOUBLE DEFLECTION GRILLE WITH FRONT BLADES PARALLEL TO SHORT DIMENSION 3/4' SPACING	
TG	TRANSFER GRILLE	TITUS 350R		WHITE ENAMEL	NOTE 1	STEEL	35° FIXED DEFLECTION GRILLE WITH BLADES IN HORIZONTAL POSITION 3/4° SPACING	

1. CONTRACTOR TO VERIFY CEILING TYPE AND PROVIDE PROPER FRAME AND BORDER TYPE. TITUS RAPID MOUNT FRAME FOR GYP. BRD. APPLICATIONS.

SUPPLY GRILLE SIZE SCHEDULE - SG							
CFM RANGE FACE SIZE DUCT SIZE							
0 - 125	8"x8"	6 <b>"</b> ×6"					
126 - 225	10"×10"	8 <b>*</b> ×8 <b>*</b>					
226 - 330	14"×8"	12 <b>"</b> ×6"					
331 - 440	14"×10"	12 <b>"</b> ×8"					
441 - 580 14"×12" 12"×10"							
FACE SIZE TO BE SIZE SHOWN UNLESS OTHERWISE NOTED							

DUCT SIZE TO BE SIZE SHOWN OR EQUIVALENT UNLESS OTHERWISE NOTED

LOUVER SCHEDULE							
TAG	TYPE	CFM	PR. DROP W.G.	MANUFACTURER MODEL			
L-1	INTAKE AIR	50	0.03	RUSKIN ELF6375DX			

RETURN GRILLE SIZE SCHEDULE - R TRANSFER GRILLE SIZE SCHEDULE - TG							
CFM RANGE FACE SIZE DUCT SIZE							
0 - 150	10 <b>"</b> ×8"	8 <b>″</b> ×6 <b>″</b>					
151 - 275	10 <b>*</b> ×10 <b>*</b>	8 <b>*</b> ×8 <b>*</b>					
276 - 600	14"×12"	12"×10"					
601 - 1100	24"×12"	14"×14"					
1101 - 1750	24"×18"	16 <b>"</b> ×16 <b>"</b>					
1751 - 2000	24"x24"	18 <b>"</b> ×16"					
FACE SIZE TO BE SIZE SHOWN UNLESS							

OTHERWISE NOTED DUCT SIZE TO BE SIZE SHOWN OR EQUIVALENT UNLESS OTHERWISE NOTED

FLEX DUCT WILL NOT BE ALLOWED ON RETURN GRILLE CONNECTIONS

CERTIFICATE (CF-2R FORM), COMPLETED AND SIGNED BY THE INSTALLER, LISTING THE EQUIPMENT INSTALLED, (MANUFACTURER, MODEL, AND

EFFICIENCIES, U-VALUES AND SHGC-VALUES, ETC.) AND THAT IT MEETS OR EXCEEDS THE REQUIREMENTS OF THE ENERGY DOCUMENTATION (CEES

2- UPON INSTALLATION, SPECIAL INSPECTION FOR FIELD VERIFICATION AND DIAGNOSTIC TESTING PERFORMED BY A THIRD PARTY CERTIFIED HERS

3- AIR CONDITIONING EQUIPMENT DESIGNED TO BE IN A FIXED POSITION SHALL BE SECURELY FASTENED, PER MANUFACTURER'S INSTALLATION

5- MECHANICAL SYSTEM INCLUDING HEATING AND AIR CONDITIONING SYSTEMS THAT SUPPLY AIR TO HABITABLE SPACES SHALL HAVE MERV 13

6- UNLESS OTHERWISE PERMITTED OR REQUIRED BY THE DRYER MANUFACTURER'S INSTRUCTIONS AND APPROVED BY THE AUTHORITY HAVING

4- CMC SECTION 304.1: NOT LESS THAN 30" IN DEPTH, WIDTH AND HEIGHT OF WORKING SPACE SHALL BE PROVIDED IN FRONT OF ATTIC

INSTRUCTIONS. INSTALLATION INSTRUCTIONS SHALL BE PROVIDED TO THE FIELD INSPECTOR (CMC SECTION 903.4)

# PROVIDE UL LISTING. PROVIDE ENERGY STAR COMPLIANCE. INTERLOCK WITH WALL SWITCH. PROVIDE MOTOR WITH THERMAL OVERLOADS. FOR THE ERV: PROVIDE A READILY ACCESSIBLE OVERRIDE CONTROL (SWITCH). The override control for the whole-building ventilation shall be properly labeled: "Whole House Ventilation Fan. This fan to remain ON at all times the house is occupied."

ERV-01

TOILET

100

0.100

0.100

60%

120 / 1 / 60

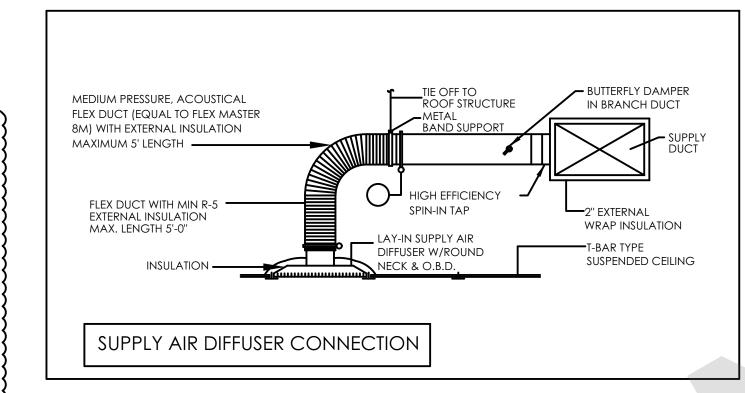
**CEILING MOUNT** 

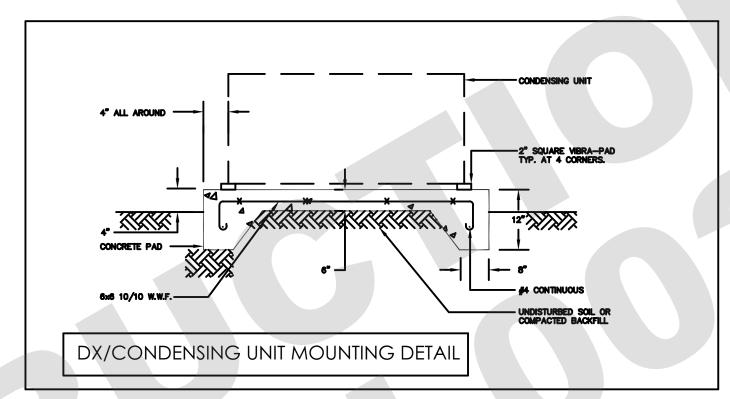
PANASONIC - INTELLI-BALANCE

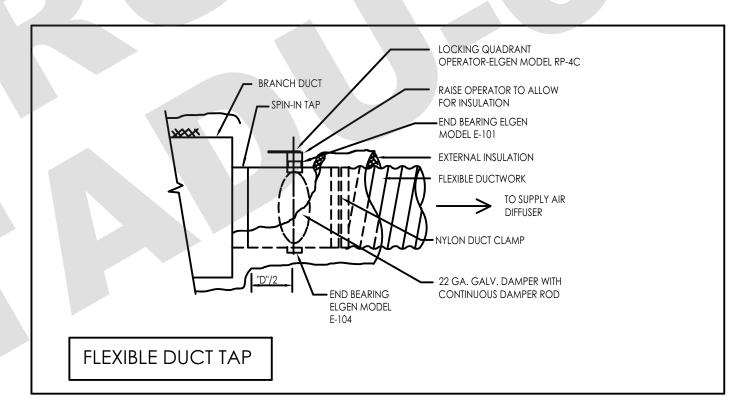
DIRECT DRIVE

1.0 SONE

We are having a Continuous Operation of the Whole Total Required Ventilation Rate [ASHRAE 62.2:4.1.1] is calculated per Equation 150.0-B Equation 150.0-B= 0.03 \* Floor area + 7.5 (Nbr+1) Qtot = total required ventilation rate, cfm Afloor = dwelling-unit floor area, ft2 Nbr = number of bedrooms (not to be less than 1) Per the above Equation, below are the calculations for each of the ADUs. For ADU 2: 0.03 \* 514 + 7.5 (1+1) = ~ 31 CFM







# ——4" CLOTHES DRYER VENT DIRECTLY TO ROOF WITH BACK DRAFT DAMPER -CONCRETE PAD FOR CONDENSER

KH-01

KITCHEN

100

0.250

0.250

15.4

1182

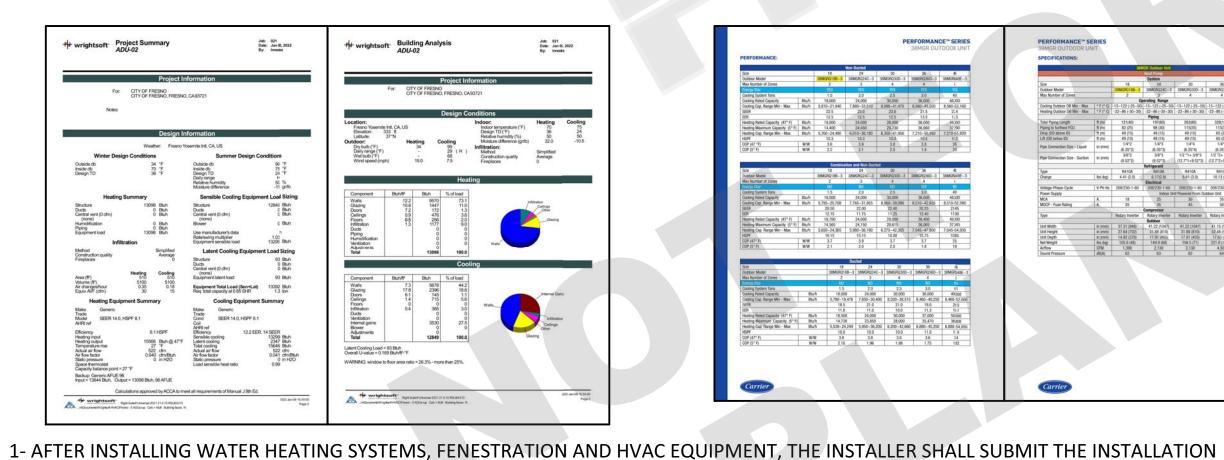
120 / 1 / 60

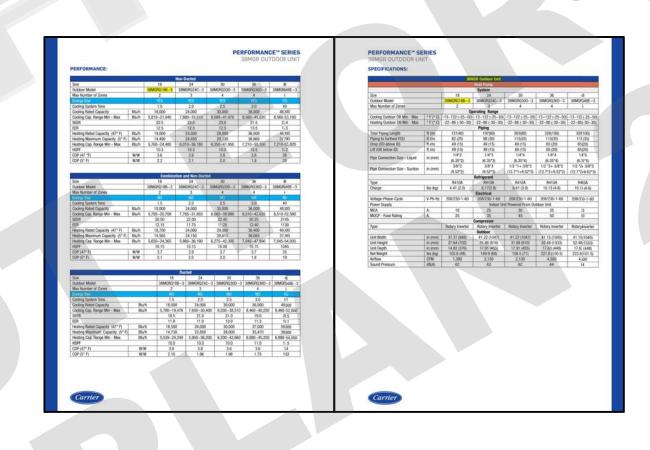
**CEILING MOUNT** 

DIRECT DRIVE

PANASONIC

# PROVIDE A PERMANENT ELECTRIC OUTLET AND LIGHT FIXTURE CONTROLLED BY A SWITCH LOCATED AT THE ATTIC ACCESS LOCATION

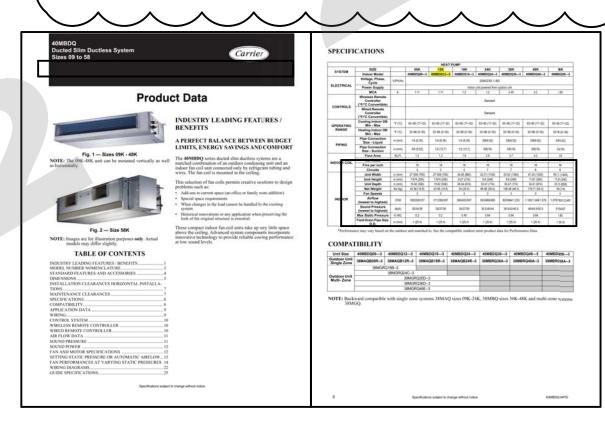




SCHEDULE No. 3

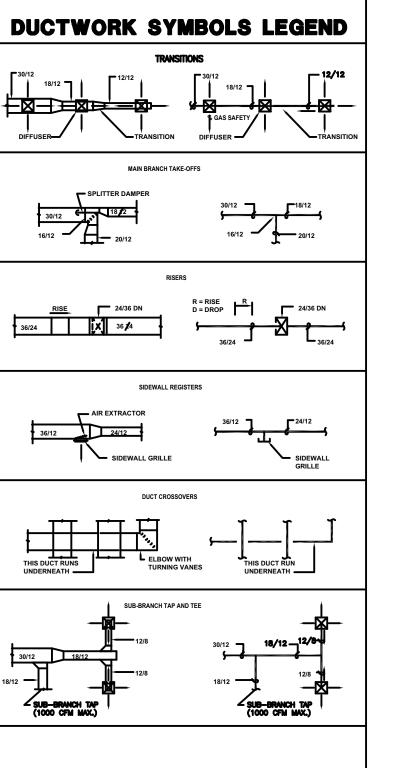
SOUND RATING

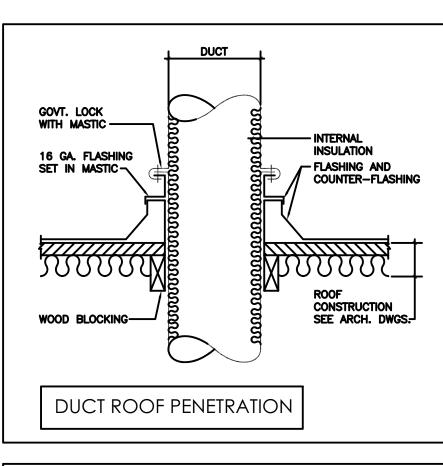
MINIMUM SUPPLY VOLUME (CFM)

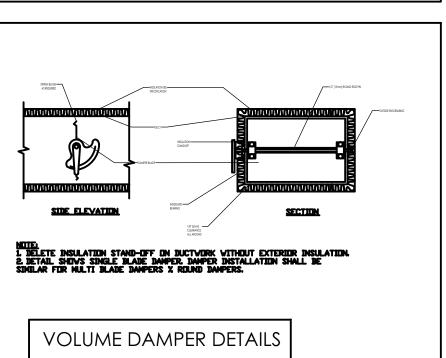


Provide Special Inspection for Field Verification and Diagnostic Testing performed by a third party certified HERS Rater for the following:

- a) Quality insulation installation
- b) Indoor air quality ventilation
- ) Kitchen range hood d) Minimum air flow
- e) Verified EER
- (i) Verified SEER
- g) Verified refrigerant charge
- h) Fan efficacy watts / CFM
- Verified HSPF i) Verified heat pump rated heating capacity
- k) Duct leakage testing
- I) Ducts located entirely in conditioned space confirmed
- by duct leakage testing







# **InnoDez**

Foxbrough pl Address: Pleasanton, CA. 94566

(424) 414-0997 www.innodez.com

#### CLIENT:

ADDRESS:

CITY OF FRESNO CALIFORNIA

hello@innodez.com

#### **CONFIDENTIALITY STATEMENT:**

ALL DRAWINGS AND WRITTEN MATERIALS

APPEARING HEREIN CONSTITUTE THE

ORIGINAL AND UNPUBLISHED WORK OF THE

DUPLICATED, USED OR DISCLOSED WITHOUT

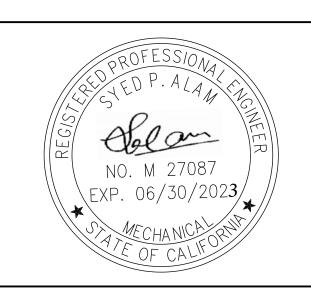
DESIGNER AND THE SAME MAY NOT BE

CONSENT OF THE DESIGNER.

#### **NOTES:**

1. ALL DIMENSIONS HEREIN ARE IN IMPERIAL UNITS UNLESS STATED OTHERWISE. 2. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT DESIGNER, ENGINEER OR SPECIALIST DRAWINGS AND SPECIFICATIONS. 3. THE CONTRACTOR MUST CHECK ALL DIMENSION AT SITE BEFORE COMMENCING WORK. 4. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY TEMPORARY SUPPORT

TO THE BUILDING AND ANY ADJACENT STRUCTURES.



REV. N	], DESCRIPTION	DATE	BY '
02	FOR APPROVAL	06.22	MN
01	FOR APPROVAL	03.22	MN
00	FOR APPROVAL	12.21	MN

# PROJECT:

**ADU PROGRAM** 

MECHANICAL LAYOUT UNIT 2

PROJ. NO.	PROJ. ENG	ir. Sca	ALE @ 24X36:
2104			1/4"=1'-0"
DRAWING	ND.	•	RE√.
٨	۸1.0	1	2

## FEET, INCLUDING TWO 90 DEGREE ELBOWS. A LENGTH OF 2 FEET SHALL BE DEDUCTED FOR EACH 90 DEGREE ELBOW IN EXCESS OF TWO. (CMC504.4.2.1

SECTION 10-103(a)(3)).

RATER SHALL BE PROVIDED.

MOUNTED MECHANICAL EQUIPMENT.

FILTERS OR BETTER. (CEC 150.0(m)(12)(c)

JURISDICTION, DOMESTIC DRYER MOISTURE EXHAUST DUCTS SHALL NOT EXCEED A TOTAL COMBINED HORIZONTAL AND VERTICAL LENGTH OF 14

# PLUMBING SPECIFICATIONS

THE WORK INCLUDES MODIFICATION TO THE EXISTING PLUMBING SYSTEM AND PROVIDING NEW MATERIALS, FITTINGS AND ACCESSORIES NECESSARY FOR A COMPLETE FUNCTIONING PLUMBING SYSTEM. THE WORK ALSO INCLUDES ROUGH-IN AND FINAL CONNECTIONS TO FOOD SERVICE EQUIPMENT AND BEVERAGE DISPENSING EQUIPMENT PROVIDED BY OTHERS. ALL WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES AND/OR ORDINANCES AND IS SUBJECT TO INSPECTION.

HOOK-UP CHARGES, PERMITS AND ALL OTHER EXPENSES RELATED TO A COMPLETE AND FUNCTIONING PLUMBING SYSTEM ARE INCLUDED AS A PART OF THIS SECTION.

WARRANTY: PROVIDE LABOR AND MATERIALS TO REPAIR OR REPLACE DEFECTIVE PARTS AND MATERIALS AS REQUIRED FOR ONE YEAR AFTER SUBSTANTIAL COMPLETION OR OWNER ACCEPTANCE OF THE COMPLETED PROJECT. PROVIDE A SEPARATE LINE ITEM DEDUCT AMOUNT ON THE PROPOSAL FORM TO DELETE WARRANTY SERVICE, AT THE OWNER'S OPTION.

THE INTENT OF THE DRAWINGS IS TO INDICATE THE GENERAL EXTENT OF WORK REQUIRED FOR THE PROJECT. THE DRAWINGS FOR PLUMBING WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, FIXTURES AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. REFER TO MANUFACTURER'S STANDARD ROUGH-IN DRAWINGS FOR PLUMBING FIXTURE INSTALLATION REQUIREMENTS. COMPLY WITH ALL APPLICABLE ADA INSTALLATION REQUIREMENTS.

COORDINATE WITH THE WORK OF OTHER SECTIONS, EQUIPMENT FURNISHED BY OTHERS, AND WITH THE CONSTRAINTS OF THE EXISTING CONDITIONS OF THE PROJECT SITE.

PIPING SYSTEMS - GENERAL: ALL PIPING SHALL BE RUN PARALLEL TO BUILDING LINES AND SUPPORTED AND ANCHORED AS REQUIRED TO FACILITATE EXPANSION AND CONTRACTION. ALL PIPING SHALL BE CONCEALED EXCEPT IN UNFINISHED SPACES. INSTALL AS REQUIRED TO MEET ALL CONSTRUCTION CONDITIONS AND TO ALLOW FOR INSTALLATION OF OTHER WORK SUCH AS DUCTS AND ELECTRICAL CONDUIT. AT ALL CONNECTIONS BETWEEN FERROUS PIPING AND NONFERROUS PIPING, PROVIDE AN ISOLATING DIALECTIC UNION. ALL HANGERS SHALL BE COMPATIBLE WITH PIPING MATERIAL TO PREVENT CORROSION.

PROVIDE ALL FITTINGS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY TO FACILITATE THE PLUMBING SYSTEM'S FUNCTIONING AS INDICATED BY THE DESIGN AND THE EQUIPMENT INDICATED.

FIXTURES/EQUIPMENT FURNISHED BY OTHERS: PLUMBING CONTRACTOR SHALL PROVIDE UTILITY CONNECTIONS REQUIRED SUCH AS WATER, GAS, AIR, SUPPLIES, WASTE OUTLET, TRAPS, ETC. AT ALL PLUMBING TYPE FIXTURES OR EQUIPMENT FURNISHED BY OWNER, GENERAL CONTRACTOR, FOOD SERVICE CONTRACTOR, EQUIPMENT SUPPLIER, ETC. INCLUDED ARE STOP VALVES, ESCUTCHEONS, AND CHROME PLATED BRASS TUBING WITH COMPRESSION FITTINGS.

SEWER AND WASTE PIPING: PROVIDE ALL DRAINS AND SEWERS WITHIN THE SPACE WITH CONNECTION TO THE EXISTING DRAINAGE SYSTEMS ON-SITE. SANITARY DRAINAGE PIPING ABOVE FLOOR SHALL BE CO-EXTRUDED PVC DWV (SCHEDULE 40) PIPE, FITTINGS AND CONNECTIONS. SANITARY DRAINAGE PIPING BELOW GRADE SHALL BE CO-EXTRUDED PVC DWV (SCHEDULE 40) PIPE WITH SOLVENT WELD FITTINGS MAY BE USED (WHERE PERMITTED BY CODE/LOCAL AUTHORITIES). ALL DRAINAGE PIPING SHALL BE UNIFORMLY PITCHED, 1/4" PER FOOT UNLESS OTHERWISE REQUIRED BY EXISTING CONDITIONS, OR INDICATED ON THE DRAWINGS.

VENTS: PROVIDE A COMPLETE SYSTEM OF STANDARD WEIGHT CAST IRON NO-HUB VENT RISERS WHERE THE CEILING SPACE IS USED AS A RETURN AIR PLENUM OR USE CO-EXTRUDED PVC DWV (SCHEDULE 40) PIPE (WHERE PERMITTED BY CODE/LOCAL AUTHORITIES) WHERE THERE IS A DUCTED RETURN AIR SYSTEM. DO NOT USE PVC PIPE IN RETURN AIR PLENUM SPACES. THE VENT SYSTEM SHALL BE CARRIED THROUGH THE ROOF WITH APPROPRIATE FLASHING.

CONDENSATE AND INDIRECT DRAIN PIPING:PIPING ABOVE FLOOR SHALL BE CO-EXTRUDED PVC DWV (SCHEDULE 40) PIPE, FITTINGS AND CONNECTIONS. PIPING BELOW GRADE SHALL BE CO-EXTRUDED PVC DWV (SCHEDULE 40) PIPE WITH SOLVENT WELD FITTINGS.

CLEANOUTS: PROVIDE CLEANOUTS AT THE END OF EACH HORIZONTAL RUN, AND AT THE BASE OF ALL VERTICAL WASTE AND DRAIN PIPES. CLEANOUTS SHALL BE OF THE SAME SIZE AS THE PIPES THEY SERVE, CONFORMING TO CODE REQUIREMENTS. PROVIDE SUITABLE WALL OR FLOOR CLEANOUTS WITH ACCESSORIES TO OBSCURE FROM VIEW.

WATER DISTRIBUTION PIPING: LAYOUT WATER PIPING SO THAT THE ENTIRE SYSTEM CAN BE DRAINED. HOT AND COLD WATER PIPING SHALL BE 1/2" MIN. CPVC PIPE WITH SOLVENT FITTING. PROVIDE WATER HAMMER ARRESTERS AT EACH FIXTURE OR GROUP OF FIXTURES AS REQUIRED. INSTALL CHROME PLATED BRASS ESCUTCHEON PLATES AT ALL PENETRATIONS THROUGH FINISHED SURFACES (INCLUDING CABINET INTERIORS).

PIPE INSULATION: INSULATE (AS ALLOWED BY CODE) ALL LISTED SERVICE PIPING AS FOLLOWS. DOMESTIC COLD/HOT WATER, HOT WATER RETURN, STORM WATER PIPING. PROVIDE 1" PREFORMED FIBERGLASS, ASJ/SS-11, FLAME SPREAD 25, SMOKE DEVELOPED 50, ASTM C-547. FOR CONDENSATE PIPING PROVIDE 1/2" THICK INSULATION OF SAME CHARACTERISTICS AS LISTED FOR 1" ABOVE. WHERE PERMITTED BY LOCAL CODES, PROVIDE 1/2" SELF-ADHESIVE UNICELLULAR FOAM PIPE INSULATION WITH PRE-FORMED PVC FITTING COVERS - EQUAL TO SELF-ADHESIVE ARMSTRONG 2000 WITH K FACTOR OF 0.27 AT 75 DEGREES MEAN TEMPERATURE. INSULATE ANY EXPOSED CONDENSATE PIPING WITH WASTE TEMPERATURE BELOW 60 DEGREES F.

SHUTOFF VALVES, WITH UNIONS SHALL BE PROVIDED FOR SERVICE TO EACH PLUMBING FIXTURE, FOOD SERVICE EQUIPMENT ITEM OR OTHER EQUIPMENT ITEM, TO FACILITATE ISOLATION FOR REPAIR OR REPLACEMENT. VALVES SHALL BE EQUAL TO JENKINS #902-T BALL VALVE, CHROME-FINISHED BRONZE, TEFLON SEATS AND PACKING, 400 LB. W.O.G., SOLDER END.

ACCESS PANELS SHALL BE PROVIDED WHERE CONCEALED CONTROL DEVICES, VALVES, ETC. ARE CONCEALED WITHIN WALLS. WHERE ACCESS FOR ADJUSTMENT AND MAINTENANCE IS POSSIBLE THROUGH LAY-IN SUSPENDED CEILINGS, ACCESS PANELS ARE NOT REQUIRED.

PIPING SYSTEM- PVC SCHEDULE 40, SCHEDULE 80 AND CPVC PIPE WITH SOLVENT FITTINGS SHALL BE USED WHERE PEMITTED BY CODE/LOCAL AUTHORITIES.

INSTALLATION: THOROUGHLY CLEAN ITEMS BEFORE INSTALLATION. CAP PIPE OPENINGS TO EXCLUDE DIRT UNTIL FIXTURES ARE INSTALLED AND FINAL CONNECTIONS HAVE BEEN MADE. PROCEED AS RAPIDLY AS CONSTRUCTION WILL PERMIT. SET FIXTURES LEVEL AND IN PROPER ALIGNMENT. INSTALL SUPPLIES IN PROPER ALIGNMENT WITH FIXTURES. INSTALL SILICONE SEALANT BETWEEN FIXTURES AND ADJACENT MATERIAL, FOR SANITARY JOINT, AND OMIT ESCUTCHEONS.

REPAIR EXISTING PLUMBING SYSTEM COMPONENTS DAMAGED BY CONSTRUCTION OPERATIONS AND RESTORE TO ORIGINAL CONDITIONS.

TEST WATER SYSTEM UNDER 150 PSIG HYDROSTATIC PRESSURE, FOR FOUR (4) HOURS MINIMUM. WHEN TESTING INDICATES MATERIALS OR WORKMANSHIP IS DEFICIENT, REPLACE OR REPAIR AS REQUIRED, AND REPEAT TEST UNTIL STANDARDS ARE ACHIEVED.

ROOF PENETRATIONS SHALL COMPLY WITH "SMACNA" AND "NRCA" STANDARDS, AND WITH THE REQUIREMENTS OF THE EXISTING ROOFING WARRANTY, IF APPLICABLE. DO NOT PERFORM ROOFING PENETRATIONS IN A MANNER WHICH WOULD VOID OR OTHERWISE LIMIT THE EXISTING ROOFING WARRANTY.

# GENERAL NOTES

1. THE INTENT OF THESE PLANS AND SPECIFICATIONS IS TO INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND SERVICES NECESSARY TO FURNISH, INSTALL, TEST, AND ADJUST A COMPLETE WORKABLE PLUMBING INSTALLATION AS SHOWN, PRESCRIBED, OR REASONABLY IMPLIED BUT NOT LIMITED TO THAT EXPLICITLY INDICATED IN THE CONTRACT DOCUMENTS, BUT NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE INTENT THEREOF.

2. THE ENTIRE INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF 2019 CALIFORNIA CODE AND ALL OTHER APPLICABLE CODES AND REGULATIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION. IN THE EVENT OF CONFLICT BETWEEN SPECIFICATIONS, CODES, AND REGULATIONS, THE MORE RESTRICTIVE SHALL APPLY.

3. COORDINATE ENTIRE INSTALLATION OF THE PLUMBING SYSTEM WITH THE WORK OF OTHER TRADES PRIOR TO ANY FABRICATION OR INSTALLATION. FIELD VERIFY ALL DIMENSIONS AND CONDITIONS. REPORT ANY DISCREPANCIES, IN WRITING, TO THE ENGINEER PRIOR TO COMMENCEMENT

4. CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS WITH ALL CHANGES NOTED THEREON AT THE COMPLETION OF THE PROJECT IN ACCORDANCE WITH THE SPECIFICATIONS.

5 PROVIDE ONE YEAR WARRANTY ON ALL PARTS AND LABOR.

6. THE DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO SHOW SCOPE. CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER TRADES TO PROVIDE THE BEST ARRANGEMENT OF ALL DUCT, PIPE, CONDUIT, ETC.

7. ALL CUTTING AND PATCHING OF THE EXISTING STRUCTURE SHALL BE PROVIDED UNDER OTHER SECTIONS OF THE WORK. PROVIDE NECESSARY REQUIREMENTS TO THE PROJECT SUPERINTENDENT.

8. ALL HOT WATER PIPING AND RECIRCULATION PIPING (EXCEPT RUNOUTS 12 FT. OR SHORTER TO INDIVIDUAL FIXTURES) SHALL BE INSULATED TO MEET THE REQUIREMENTS OF THE 2019 CALIFORNIA PLUMBING CODE.

9. CONDENSATE DRAINS SHALL BE PROVIDED FOR EACH AIR CONDITIONING UNIT. HORIZONTAL CONDENSATE DRAINS ABOVE ANY CEILING SHALL BE INSULATED WITH MIN. 3/8" THICK CLOSED CELL INSULATION.

10. PIPING:

A. WASTE, VENT, AND STORM DRAIN PIPING SHALL BE CO-EXTRUDED PVC

SCHEDULE 40) PIPE

B. WATER PIPE SHALL BE CPVC PIPE

HOUR METERED GAS TEST SHALL BE REQUIRED.

EXTERIOR WALLS, ROOFS, OR FLOORS.

C. CONDENSATE PIPING SHALL BE CO-EXTRUDED PVC (SCHEDULE 40) PIPE D. INSIDE GAS PIPING SHALL BE BLACK IRON SCHEDULE 40 WITH MALLEABLE IRON FITTINGS. OUTSIDE SHALL BE GALVANIZED IRON SCHEDULE 40 WITH GALVANIZED FITTINGS. GAS LINE TO BE PAINTED GRAY IN COLOR. A 24

E. ALL PIPING NOT ENCLOSED IN CONDITION SPACE OR AT EXTERIOR WALLS SHALL BE INSULATED.

F. PIPING: PVC SCHEDULE 40, SCHEDULE 80 AND CPVC PIPING WITH SOLVENT WELD FITTINGS SHALL BE USED WHERE PERMITTED BY CODE/LOCAL AUTHORITIES

11. ALL VENTS OR EXHAUSTS SHALL BE AT LEAST 10 FT. AWAY OR 3 FT. ABOVE ANY WINDOW, DOOR, OPENING, OR AIR INTAKE.

12. CLEANOUTS SHALL BE INSTALLED PER THE CALIFORNIA PLUMBING CODE

14. PROVIDE ISOLATION FOR ALL PIPES THAT COME IN CONTACT WITH THE STRUCTURE.

13. PROVIDE WATER TIGHT FLASHINGS WHEREVER PIPES PASS THROUGH

15. LOCATION OF EXISTING UTILITIES AND POINTS OF CONNECTION ARE APPROXIMATE. CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND DEPTHS OF EXISTING UTILITIES AND SERVICES PRIOR TO STARTING WORK OF THIS SECTION. IF INDICATED POINTS OF CONNECTION CANNOT BE MADE TO EXISTING UTILITIES AS FOUND, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO INSTALLING ANY WORK WHICH MAY BE AFFECTED.

16. VALVES SHALL BE NIBCO, JENKINS, HAMMOND, RED & WHITE OR APPROVED EQUAL. SERVICE PRESSURE SHALL BE SUITABLE FOR SERVICE INTENDED. THE MAIN WATER SHUT OF VALVE SHALL BE A FULL PORT BALL TYPE AND APPROVED FOR SERVICE INTENDED.

17. CONTRACTOR SHALL PROVIDE ALL SHUT OFF VALVES AS NECESSARY TO ISOLATE ANY EQUIPMENT, PLUMBING ITEMS, OR FIXTURES, THAT MAY NEED SERVICING OR ARE SUBJECT TO FAILURE WHETHER OR NOT SUCH VALVES ARE SHOWN ON THE DRAWINGS.

18. PROVIDE HANGERS AND SUPPORTS AS REQUIRED. PLUMBERS TAPE AND WIRE ARE NOT ACCEPTABLE.

19. CONTRACTOR IS RESPONSIBLE FOR HIS OWN TRENCHING, BACKFILL, AND COMPACTION OF TRENCHES NECESSARY TO COMPLETE HIS SCOPE OF WORK. BACKFILLED TRENCHES SHALL BE RETURNED TO THEIR ORIGINAL GRADE UNLESS NOTED OTHERWISE.

20. CONTRACTOR SHALL AFFIX A MAINTENANCE LABEL TO ALL EQUIPMENT REQUIRING ROUTINE MAINTENANCE AND SHALL PROVIDE MAINTENANCE AND OPERATIONAL MANUALS IN ACCORDANCE WITH THE SPECIFICATIONS.

21. ALL EQUIPMENT THAT REQUIRES KEYS OR SPECIAL TOOLS TO OPERATE SHALL SUPPLY THE OWNER WITH TWO OF ANY SUCH KEYS OR TOOLS FOR EACH PIECE OF EQUIPMENT THAT REQUIRE THE SAME.

25. ANY CHANGE OR DEVIATION FROM THESE PLANS OR SPECIFICATIONS SHALL REQUIRE THE APPROVAL, IN WRITING, OF THE ENGINEER PRIOR TO COMMENCEMENT OF SUCH WORK.

26. ALL PLUMBING, ELECTRICAL, AND GAS LINES SHALL BE CONCEALED WITHIN THE THE BUILDING STRUCTURE TO AS GREAT EXTENT AS POSSIBLE. ALL LINES NOT CONCEALED SHALL BE SECURED 6" OFF THE FLOOR AND 3/4" FROM THE WALLS USING STANDOFF BRACKETS

27. AN APPROVED BACKFLOW PREVENTOR SHALL BE PROPERLY INSTALLED UPSTREAM OF ANY POTENTIAL HAZARD BETWEEN THE POTABLE WATER SUPPLY AND SOURCE OF COMTAMINATION.

28. WATER SUPPLY CARBONATORS SHALL BE PROTECTED BY AN APPROVED REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTOR. THE RELIEF VALVE SHALL DRAIN IN-DIRECTLY TO A FLOOR SINK WITH A 1" MIN. AIR GAP.

				PIPE MATI								
SERVICE		COPPER	COPPER	COPPER	CAST	BLACK	GALV.	VTRI.	ABS	SCH.40 PVC	SCH.40 CPVC	REMARK
SERVICE		TYPE "M"	TYPE "L"	TYPE "K"	IRON	STEEL	STEEL	CLAY				1
WATER PIPING	INSIDE		X									
	OUTSIDE									X		
Sanitary Drain	INSIDE									X		
	OUTSIDE									X		
Sanitary vent	INSIDE									X		
	OUTSIDE									X		
GAS PIPING	INSIDE					Х						
	OUTSIDE						Х					
STORM DRAIN	INSIDE									X		
	OUTSIDE									X		
INDIRECT	INSIDE									X		
DRAINAGE	OUTSIDE									X		
CONDESATE	INSIDE									X		
	OUTSIDE									X		
COMPRESSED	INSIDE					Х						
AIR	OUTSIDE						X					

SYMBOL	ABBREV	DESCRIPTION
	SS or W	NEW SEWER OR WASTE
	V	NEW VENT
	— CW	NEW COLD WATER
	— HW	NEW HOT WATER
	— G	NEW GAS
	— CD	NEW CONDENSATE DRAIN
CA	— CA	COMPRESSED AIR
Φ	FCO	FLOOR CLEANOUT
Ю	WCO	WALL CLEANOUT
<b>—</b>	FD	FLOOR DRAIN
	FS	FLOOR SINK
5-0	— TP	TRAP PRIMER & TRAP PRIMER PIPING
$\bowtie$	SOV	SHUT-OFF VALVE
N	— CV	CHECK VALVE
	— PRV	BACKFLOW PREVENTER W SOV'S
<u> </u>	T & P	
———	DN	PIPE DOWN
0	UP	PIPE UP
•	POC	POINT OF CONNECTION
7	-	PLUMBING NOTE CALL-OUT
	ABV	ABOVE
	AFF	ABOVE FINISH FLOOR
	AP	ACCESS PANEL
	BEL	BELOW
	BLDG	BUILDING
	CLG	CEILING
	CONT	CONTINUATION
	EL	ELEVATION
	FIN	FINISH
	FL	FLOOR
	GR	GRADE
	NTS	NOT TO SCALE
	OC	ON CENTER
	S= %_	SLOPE AT A PERCENTAGE
	SHT	SHEET
	TYP	TYPICAL
	VTR	VENT THRU ROOF

# PLUMBING / GENERAL NOTES

BATHTUBS AND WHIRLPOOL BATHTUBS. THE MAX. HOT WATER TEMPERATURE DISCHARGING SHALL BE LIMITED TO 120 DEGREES. CPC 414/2019 BATHTUBS WASTE OPENING IN FLOOR OVER CRAWL SPACES SHALL BE PROTECTED BY A METAL SCREEN NOT EXCEEDING 12" OR SOLID COVER. CPC 313.12.4 2019 SHOWERS AND TUB-SHOWERS COMBINATIONS IN ALL BUILDINGS SHALL BE PROVIDED WITH INDIVIDUAL CONTROL VALVES OF THE PRESSURE BALANCE, THERMOSTATIC, OR COMBINATION OF BOTH THAT PROVIDE SCALD AND THERMAL SHOCK PROTECTION. VALVES SHALL BE ADJUSTED TO DELIVER A MAXIMUM MIXED WATER SETTING OF 120 DEGREES FAHRENHEIT. THE WATER HEATER THERMOSTAT SHALL NOT BE CONSIDERED A SUITABLE CONTROL FOR MEETING THIS PROVISION. 418.0 CPC/2019

VERIFY AND WHERE WATER PRESSURE EXCEEDS 80 PSI AN APPROVED
PRESSURE REGULATOR PRECEDED BY AN ADEQUATE STRAINER SHALL BE INSTALLED
608.2 CPC / 2019
1-INSTALL TEMPERATURE AND PRESSURE RELIEF VALVE WITH MINIMUM
34" DRAIN PIPE AND TERMINATE TO THE EXTERIOR OF THE BUILDING OVER

WINDOW, DOOR OR VISIBLE LOCATION. DISCHARGE FROM A RELIEF VALVE INTO A WATER HEATER PAN SHALL BE PROHIBITED CPC 608.5, 510.8.

2-PROVIDE (ON THE PLANS) A GAS PIPING DIAGRAM OF THE GAS PIPING

2-PROVIDE (ON THE PLANS) A GAS PIPING DIAGRAM OF THE GAS PIPING SYSTEM THAT INCLUDES ALL PIPE SIZES, PIPE LENGTHS AND BTU RATINGS.

3-SUBMIT GAS LOAD CALCULATIONS IN ACCORDANCE WITH CPC TABLE
12-8 TO VERIFY THE PIPE SIZES ARE ADEQUATE FOR THE MAXIMUM
DELIVERY CAPACITY OF CUBIC FEET OF GAS PER HOUR.
4- A WHOLE HOUSE HAS TEST IS REQUIRED UPON COMPLETION OF THE INSTALLATION,
ALTERATION, OR REPAIR OF ANY GAS PIPING.
THE CITY SHALL BE NOTIFIED WHEN GAS PIPING IS READY FOR INSPECTION.
5- 2 GPM SHOWER FIXTURE, MAX.1.5 GPM BATHROOM FAUCET, MAX. 2 GPM KITCHEN

BATHROOMS: PROVIDE AN EXHAUST FAN (AT LEAST 50 CFM) DUCTED TO THE OUTSIDE (MINIMUM 4" DIAMETER FLEX DUCT WITH A MAXIMUM LENGTH OF 70") WITH A MINIMUM VENTILATION RATE OF 100 CFM, IDENTIFY THE REQUIREMENT FOR A BACKDRAFT DAMPER ON THE DUCT, AN ENERGY STAR COMPLIANT EXHAUST FAN THAT IS CONTROLLED BY A HUMIDITY SENSOR THAT IS CAPABLE OF BEING ADJUSTED BETWEEN ≤ 50-PERCENT TO 80-PERCENT HUMIDITY; AND A SEPARATE SWITCH FROM THE LIGHT UNLESS THE FAN IS ALLOWED TO OPERATE WITH THE LIGHT SWITCHED OFF.

FAUCET, AND MAX 1.28 WATER CLOSET TO CONFORM TO CITY GREEN REQUIREMENTS.

6-NOTE THAT ALL PLUMBING VENTS SHALL TERMINATE NOT LESS THAN 6"
ABOVE ROOF NOR LESS THAN 1' FROM ANY VERTICAL SURFACE. VENTS
SHALL TERMINATE NOT LESS THAN 10" FROM OR 3' ABOVE ANY WINDOW,
DOOR OPENING AIR INTAKE, OR VENT SHAFT NOR 3' FROM LOT LINE.

(2019 CPC 906) IF WATER PRESSURE EXCEEDS 80 PSI, AND EXPANSION TANK AND AN APPROVED PRESSURE REGULATOR SHALL BE INSTALLED. (2019 CPC608.2)

NON-REMOVABLE BACK FLOW PRE-VENTER OR BIBB-TYPE VACUUM
BREAKER WILL BE INSTALLED ON ALL EXTERIOR HOSE BIBS. (2019 CPC603.4.7)
HOT WATER RE-CIRCULATING SYSTEM IS INSTALLED, THE ENTIRE LENGTH
OF HOT WATER PIPES SHALL BE INSULATED. (2008 CALIFORNIA ENERGY REGULATIONS 150 (J))
HOT WATER PIPE FROM THE WATER HEATER TO THE KITCHEN WILL BE INSULATED.

(CALIFORNIA ENERGY REGULATIONS 151 (F)8 D)

# WATER SAVING STANDARDS

THE WATER SAVING PERFORMANCE STANDARDS FOR A PLUMBING FIXTURE ARE THOSE ESTABLISHED BY THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), CURRENT REVISION, OR THE FOLLOWING STANDARDS, WHICHEVER ARE THE MORE RESTRICTIVE

1.THE MAXIMUM FLOW FROM A SINK OR LAVATORY FAUCET OR A FAUCET AERATOR SHALL

NOT EXCEED 0 5 GALLONS OF WATER PER MINUTE AT A PRESSURE OF 60 POUNDS
PER SQUARE INCH WHEN TESTED IN ACCORDANCE WITH ANSI TESTING PROCEDURES
2.THE MAXIMUM VOLUME OF WATER PER FLUSH FROM A TOILET SHALL NOT EXCEED AN AVERAGE OF 1 28 GALLONS WHEN TESTED IN ACCORDANCE WITH ANSI TESTING

3. THE MAXIMUM VOLUME OF WATER PER FLUSH FROM A URINAL AND THE ASSOCIATED FLUSH VALVE, IF ANY, SHALL NOT EXCEED AN AVERAGE OF ONE GALLON WHEN TESTED IN ACCORDANCE WITH ANSI TESTING PROCEDURES

# SPECIAL NOTICE TO CONTRACTORS

1. ALL CONTRACTORS (GENERAL CONTRACTOR AND SUB-CONTRACTORS) BIDDING THIS PROJECT ARE REQUIRED TO VISIT THE JOB SITE AND VERIFY THE EXISTING CONDITIONS PRIOR TO SUBMITTING THEIR BID. CONTRACTORS ARE TO CAREFULLY REVIEW ALL CONSTRUCTION DOCUMENTS AND NOTE ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND THE CONDITIONS OBSERVED AT THE JOB SITE PRIOR TO SUBMISSION OF ANY BID. THE BUILDING OWNER REPRESENTATIVE LISTED BELOW MAY BE CONTACTED FOR ACCESS TO THE JOB

2. CONTRACTORS ARE RESPONSIBLE FOR VERIFYING THE LOCATION AND CONDITION OF ALL POINTS OF CONNECTION, LOCATION AND CONDITION OF ALL BUILDING (ROOF/FLOOR/CEILING) PENETRATIONS, LOCATION AND CONDITION OF ALL UTILITIES AND BUILDING SYSTEMS INCLUDING, BUT NOT LIMITED TO, GAS, WATER, SEWER, VENT, ELECTRICAL, BUILDING MECHANICAL SYSTEMS, DUCT CONNECTIONS, EXHAUST/OUTSIDE AIR CONNECTIONS, SECURITY, FIRE ALARM, DATA, AND PHONE PRIOR TO SUBMISSION OF THEIR BID.

3. ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND THE CONDITIONS OBSERVED SHALL BE BROUGHT TO THE ATTENTION, IN WRITING, TO THE ARCHITECT AND/OR ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.

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CITY OF FRESNO CALIFORNIA

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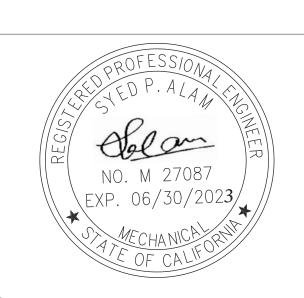
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 THE CONTRACTOR MUST CHECK ALL DIMENSION
AT SITE BEFORE COMMENCING WORK.
 THE CONTRACTOR IS RESPONSIBLE FOR
PROVIDING ALL NECESSARY TEMPORARY SUPPORT
TO THE BUILDING AND ANY ADJACENT STRUCTURES.



	REV. NI	DESCRIPTION	DATE	ВУ
	02	FOR APPROVAL	06.22	M
	01	FOR APPROVAL	03.22	M
	00	FOR APPROVAL	12.21	M
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PROJECT:
ADU PROGRAM

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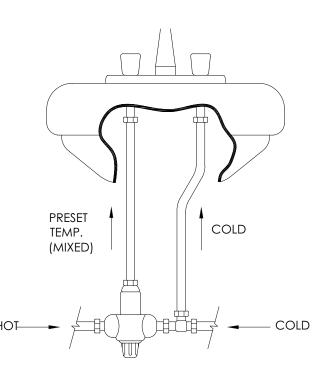
PLUMBING SPECIFICATIONS, DETAILS & SYMBOLS

PROJ. NO. PROJ. ENGR. SCALE @ 24X36:

2104 NTS

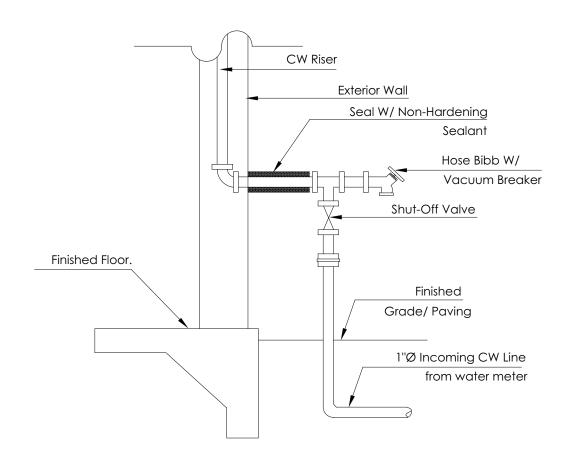
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ANTI-SCALD MIXING VALVE

**NO SCALE** 



WATER ENTRY DETAIL

NO SCALE

# TABLE 610.3: WSFU

FIXTURE UNIT	PRIVATE
SHOWER	2.0
WATER CLOSET	2.5
LAVATORY	1.0
KITCHEN SINK	1.5
CLOTHES WASHER	4.0
TOTAL WSFU	11.0

BASED ON TABLE 610.4 FOR 150 FEET & 35 PSI, THE MAIN PIPE SIZE FOR PRESSURE RANGE BETWEEN 30 AND 45 PSI IS EQUAL TO 1"

# SCHEDULE No. 1

# RESIDENTIAL GAS TANKLESS WATER HEATER

TAG	GWH-2
LOCATION	TOILET GROUND FLOOR
MANUFACTURER	NAVIEN
MODEL	NPE-240A2
TYPE	Gas
HEATING (MBH)	15 - 150
ENERGY FACTOR	0.95
MINIMUM FLOW RATE (GPM)	0.50
ELECTRICAL POWER (W)	350.00
DIMENSION (W x H x D) INCHES	17.3" x 27.4" x 13.2"
ELECTRICAL V/PH/HZ	120/1/60
HOT ,COLD & GAS CONNECTION (INCH)	3/4 NPT

1- AT TIME OF LOT SPECIFIC BUILDING PERMIT APPLICATION IF THE APPLICANT WOULD LIKE TO HAVE SEPARATE UTILITY METERS FROM THE EXISTING RESIDENCE, THEY MUST CONTACT THE CITY OF FRESNO PLANNING AND PUBLIC WORKS DEPARTMENT FOR APPROVAL AND ZONE CLEARANCES.'

2- AT TIME OF LOT SPECIFIC BUILDING PERMIT APPLICATION, IT WILL BE DETERMINED BY THE CITY OF FRESNO FIRE PREVENTION BUREAU IF FIRE SPRINKLER WILL BE REQUIRED FOR THE ACCESSORY DWELLING UNIT. IF REQUIRED, APPROVED FIRE SPRINKLER PLAN SHALL BE INCLUDED IN PLANS PRIOR TO PERMIT ISSUANCE.

3- WHEN DEVELOPMENT LENGTH EXCEEDS 150 FEET TO THE MOST REMOTE PLUMBING FIXTURE THE WATER SERVICE DESIGN WILL BE REVIEWED AT TIME OF LOT SPECIFIC BUILDING PERMIT APPLICATION.

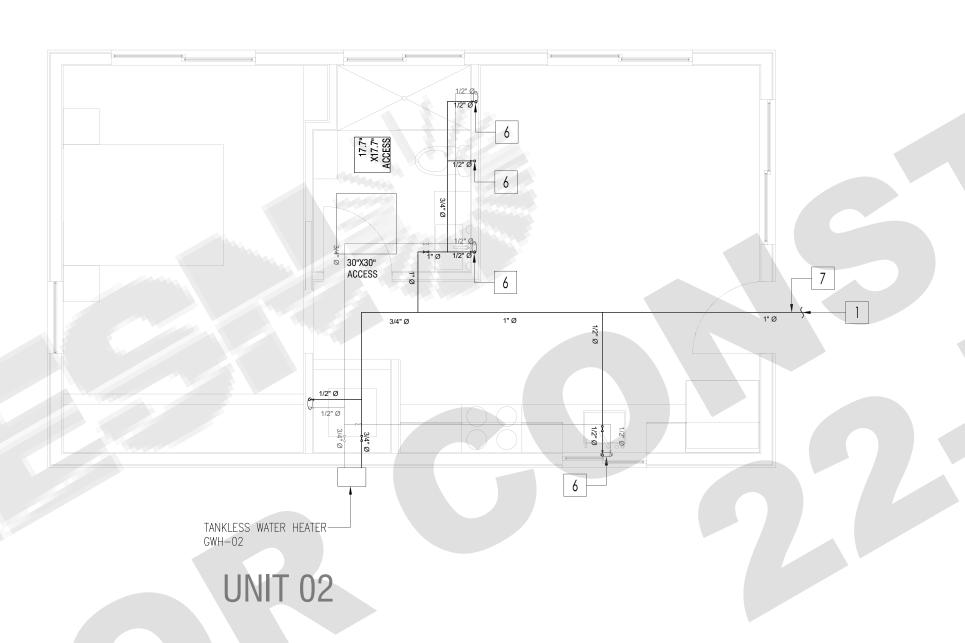
4- GALVANIZED MALLEABLE IRON, GALVANIZED WROUGHT IRON, OR GALVANIZED STEEL ARE PROHIBITED MATERIALS FOR WATER SUPPLY AND BUILDING WATER PIPING BOTH UNDERGROUND AND IN BUILDING.

5- ALL DOMESTIC HOT WATER PIPING SHALL BE INSULATED AS SPECIFIED IN CPC SECTION 609.11. IN ADDITION, PIPING MUST MEET REQUIREMENTS OF CALIFORNIA ENERGY CODE SECTION 150(j)(2)(A) i, ii & iii.

6- ALL PLUMBING CONVEYING OR DISPENSING WATER FOR HUMAN CONSUMPTION SHALL COMPLY WITH AB 1953 FOR LEAD CONTENT.

7- WATER HEATER SHALL BE PROVIDED WITH ISOLATION VALVES ON BOTH COLD AND HOT WATER CONNECTION. EACH VALVE NEEDS A HOSE BIBBS OR OTHER FITTING ALLOWING FOR FLUSHING THE WATER HEATER WHEN THE VALVES ARE CLOSED.

8- EACH VALVE NEEDS A HOSE BIBB OR OTHER FITTING FOR FLUSHING THE WATER HEATER WHEN THE VALVES ARE CLOSED.



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		Item Heat Capacity	Natural Gas,	NPE-15052 18,000-120,000	NPE-180A2	-		NPE-21052	_	NPE-24052
		(Input)	Propane Gas	BTU/H	10,000-150,0	00 BTU/H	12,000-180,0	00 STU/H	13,300-199	900 BTU/H
		Uniform Energy Factor	UEF for NG & UFS	0.93	0.95	0.95	0.95	0.96	0.95	0.96
27 to prof.			35 °F (19 °C) Temp Rise	6.8 GPM (25.8 L/m)	8.4 GPM (32 L	/m)	10.1 GPM (38	BL/m)	11.2 GPM (4	12 L/m).
7, 1		Flow Rate (DHW)	45 °F (25 °C) Temp Rise	5.3 GPM (20 L/m)	6.5 GPM (25 t	/m)	7.8 GPM (30	L/m)	8.7 GPM (33	L/m)
	$A \parallel$	(DHW)	67 °F (36 °C)	3.4 GPM	4.3 GPM	4.4 GPM	5.1 GPM	5.3 GPM	5.6 GPM	5.8 GPM
		Dimensions	Temp Rise	(13 L/m) 17.3 in (W) x 2	(16 L/m) 7.4 in 0H) x 13.2	(17 L/m) in (D)	(19 L/m)	(20 L/m)	(21 L/m)	(22 L/m)
1		Weight		62 lbs	73 lbs	68 lbs	77 lbs	73 lbs	77 lbs	73 lbs
		Installation Typ	ie e	(28 kg) Indoor or Out	(33 kg) door Wall-Hung	(31 kg)	(35 kg)	(33 kg)	(35 kg)	(33 kg)
Overhead View		Venting Type		Forced Draft D	Wrect Vent					
(Sections) No	dates.	Ignition Water Pressure		Electronic Ign 15-150 PSI	rion				_	
(0)		Natural Gas Su (from source)		3.5 in WC-10.5	in WC					
	Total Control of the	Propane Gas Si	upply Pressure	8 in WC-13in V	vc				_	
*	*	(from source) Natural Gas Ma	anifold Pressure	-0.04 in WC -		Acc: W	0.03 (4.19)	A76:WP	0.03  - 111	0.04  - 10**
		(min-max)	lanifold Pressure	-0.40 in WC -	-0.03 in WC -	0.0000000	100000	-0.76 in WC	-	0.96 in WC
NPE-180A2/210	A2/240A2	(min-max)		-0.40 in WC	-0.02 in WC -		-0.02 in WC		-0.02 in WC	0.96 in WC
SupplyConnections	SupplyConnections	Minimum Flow	Rate Cold Water Inlet		/m), < 0.01 GPN	f (0.04 L/m) opt	ion for "A2" mo	dels*	_	
Description Clameter  A Air Intake 2 in	9 9 9 9	Connection	Hot Water	1/4 in NPT						
8 Exhaust Gas Vent 2 in C Hot Water Outlet 1/, in		Sizes	Outlet Gas Inlet	⅓ in NPT						
D Gas trilet 1/4 in			Main Supply Maximum	120 V AC, 60 H	iz					
Recirculation Inlet	22 \$	Power Supply	Power	200 W (max 2	A), 350 W (max	4 A) with exten	nal pump conn	ected		
G Cold Water Inlet 14, in	District Medical Madden		Consumption Casing	Cold Rolled Ca	arbon Steel					
NPE-15093/1805	12/21052/24052	Materials	Heat Exchangers	Primary Heat I Secondary He	Exchanger: Stair at Exchanger: S	nless Steel tainless Steel				
Hr L-130320 1003			Exhaust	2 in or 3 in PV	C, CPVC, Approv	ved Polypropyle		ss steel	_	
SupplyConnections Description Diameter	SupplyConnections	Venting	Intake	2 in or 3 in PV	ecial Gas Vent T C, CPVC, Approv	ved Polypropyle	ene and stainle	ss steel		
A Airintake 3 in		55	Vent Clearances		ecial Gas Vent Ty stibles	ype BH (Class II,	A/B/C)			
Enhaust Gas Vent. 2 in     Hot Water Outlet 1/4 in		High Elevation				stallation Manu	al for additional	details and instr	utions.	
C/ Gas mee V, in  E Condensate Outlet V, in  F Cold Water Inlet V, in		Safety Devices	Flores Dayl ADC	Ignition Operat	ion Detector, W	ater Temperatu	re High Limit S			igh Limit Sensor
7 [30]	13+30mm 13+30mm	" Available for "/ configured for	A2" models configured recirculation.	ured in an option	nal ComfortFlov	v recirculation r	mode. Energy o	onsumption wi	Il ncrease whe	n the system is
nted with 2" Schedule 40/80 PVC/CPV, approved p hedule 40/80 PVC/CPVC, approved p 0 PSI working water pressure and 36 inliess steel heat exchangers, eco pre- 6 gallon for the NPE-150S2, 1.0 gallor d NPE-240S2 models respectively), a 0S2 and NPE-240S2 weigh 73 lbs) an mperature options from 97-120°F in mperature commercial applications.	.10.3/CSA 4.3. Water heater(s) shumercial use) per Navien Limited W ter(s) shall have a nominal flow rate VC, approved polypropylene and st obypropylene and stainless steel ve 10 PSI test pressure. Gas supply pre mixed burner, negative pressure g and a condensate collector. The NPI of The NPE-150S2 weigh 62lbs. Un 1°F intervals and 120-140°F in 1°F intervals and 120-140°F in 1°F	Illhave a 15(5) Varranty. Unit(see tapacity of ainless steel ventpipe at a dist ssure shall be 3 as valve, dual vellens for NPE-1 6-180A2 model it(s) shall inclusite internal circumstors, sensing	year limited i s) shall be desi — GPM/GP nt pipe at a di tance of 150' ( 5.5" to 10.5" W enturi, 3/4" in 8052 model), weighs 73 lbs de features su unit(s) shall ir ulation pump q and controlli	Heat Exchan, igned to burn igned to burn if the control of the con	ger warrani n natural ga F rise with o exceed 75' ot) with each I gas and 8. cction, 3/4" or the NPE-1 weighs 68 I ustment for onal temper on buffer ta	ty and 5(3)-, is and can b rated input (or equivale a elbow equi of to 13.0° V brass inlet/210A2/NPE lbs), and the installation rature option ik. The wattemperature	year limited of	I Parts warn th propaneBTU/hr. ch elbow eq pe length. W ane. Unit(s) r connection iels (0.7 and 2/NPE-240, vation, tem 95°F in 1°F shall be con uel ratio co	ronty (8(5): When a Fiel Water hea Water heate Shall have on Shall have 10.9 gallon: Al models w perature lo intervals, fo	year Heat d Conversion ter(s) shall l pipe length (s) is rated a steel case, olding capac s for NPE-21 veigh 77 lbs ckout, and or high an internal of

## WATER CONSERVING PLUMBING FIXTURES AND FITTINGS

Plumbing fixtures and fittings shall comply with the following:

(2019 CGBSC, California Plumbing Code (CPC) and Table 1401.1 of the CPC)

4303.1.1 All Water closets: ≤1.28 gal/flush
Tank type water closet shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-type Toilets.

4303.1.2 Urinals: <0.5 gal/flush

4303.1.3.1 Single showerheads: <1.8 gpm @ 80 psi

4303.1.3.2 Multiple showerheads: combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gpm @ 80 psi or only one shower outlet is to be in operation at a time.

4303.1.4.1 Residential Lavatory Faucets: 0.8 gpm @ 20 psi < Flow Rate <1.2 gpm @ 60 psi

4303.1.4.2 Lavatory Faucets in common and Public Use Areas (outside of dwellings or sleeping units) in residential buildings:
<0.5 gpm @ 60 psi

4303.1.4.3 Metering Faucets: <0.25 gallons per cycle

4303.1.4.4 Kitchen Faucets: ≤1.8 gpm @ 60 psi; Maximum Flow Rate of 1.8 gpm

## PLUMBING FIXTURE CERTIFICATION REQUIRED:

A plumbing fixture certification must be completed and signed by either a licensed general contractor, or a plumbing subcontractor, or the building owner certifying the flow rate of the fixtures installed. A copy of the certification can be obtained from the development services department.

# MINIMUM PIPE SIZE PER FIXTURE

FIXTURE UNIT	CWP (INCH)	HWP (INCH)
SHOWER	1/2	1/2
WATER CLOSET	1/2	_
LAVATORY	1/2	1/2
KITCHEN SINK	1/2	1/2
DISHWASHER	-	1/2
BATHTUB	1/2	1/2
LAUNDRY MACHINE	1/2	1/2

# PLUMBING SHEET NOTES

# SHEET NOTES:

1 - 1" Ø DCW FROM MUNICIPALITY.

2 - DCW, DHW & HWR UP IN WALL TO ABOVE FLOOR.

3 - DCW, DHW & HWRP DOWN IN WALL TO UNDER TILES LEVEL.

4 - DCW, DHW & DHC FROM BELOW FLOOR.

5 - DCW, DHW & RHWP UP IN WALL TO HIGH LEVEL.

6 - DCW / DHW DOWN IN WALL TO FIXTURE CONNECTION.

7 - WATER METER FOR EACH UNIT

# InnoDez

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DESCRIPTION	DATE	BY '
FOR APPROVAL	06.22	MN
FOR APPROVAL	03.22	MN
FOR APPROVAL	12.21	MN
	FOR APPROVAL FOR APPROVAL	FOR APPROVAL 06.22 FOR APPROVAL 03.22

PROJECT: ADU PROGRAM

WATER SUPPLY LAYOUT UNIT 2

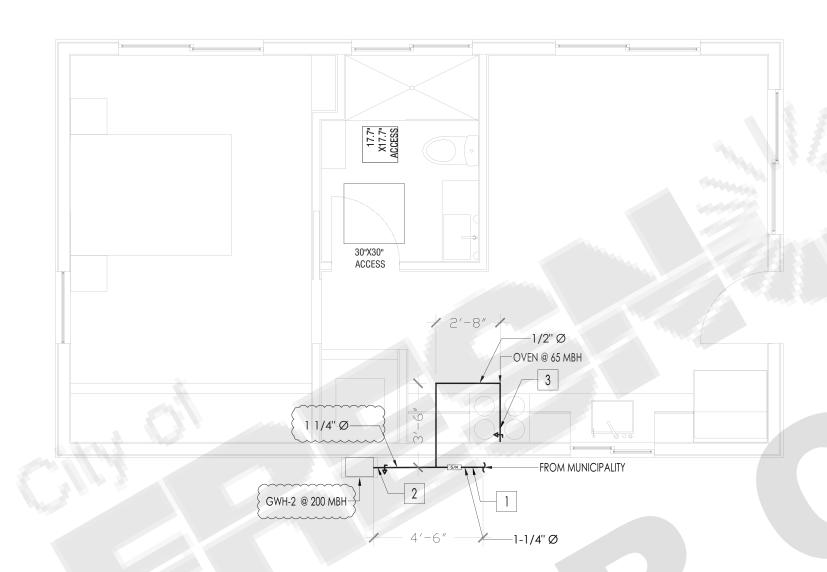
PROJ. NO. PROJ. ENGR. SCALE @ 24X36:

1/4"=1'-0"

DRAWING NO.

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UNIT 02

1- WHEN DEVELOPMENT LENGTH EXCEEDS 175 FEET THE GAS SERVICE DESIGN WILL BE REVIEWED AT TIME OF LOT SPECIFIC BUILDING PERMIT APPLICATION.

# PLUMBING SHEET NOTES

# SHEET NOTES:

GAS METER

<sup>2</sup> — GAS CONNECT TO GAS WATER HEATER

3 — GAS CONNECT TO OVEN

SIZED PER TABLE 1215.2(1) FROM THE CPC 2019

# GENERAL NOTES:

- 1. PRIOR TO PERFORMING WORK, CONTRACTOR TO COORDINATE EXACT PIPE SIZES, INVERT ELEVATIONS, PRESSURES FOR LOCATIONS OF ANY SEWER, WATER PIPING AND WATER METER WITH CIVIL UTILITIES DRAWINGS, AND ANY OTHER ENGINEER AS APPLICABLE.
- 2. PRIOR TO PERFORMING WORK, CONTRACTOR TO COORDINATE PIPE ROUTING WITH ALL OTHER TRADES AND EXISTING FIELD CONDITIONS.
- 3. REFER TO MECHANICAL PLANS FOR PLUMBING SPECIFICATION OF MATERIAL, INSULATION AND INSTALLATION REQUIREMENTS.
- 4. CONTRACTOR IS RESPONSIBLE FOR ROUGH-IN COORDINATION AND LOCATIONS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS AND FIXTURES.
- 5. CONTRACTOR IS RESPONSIBLE FOR ANY REQUIRED CUTTING AND PATCHING.
- 6. ALL NOTCHING, BORING, AND CUTTING OF HOLES IN WALL STUDS AND FLOOR JOISTS SHALL BE PERFORMED BASED ON THE LATEST ADOPTED AND APPROVED EDITION OF THE BUILDING CODE.
- 7. ALL PLUMBING FIXTURES SHALL BE OF WATER CONSERVATION TYPE AS REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION.
- 8. ALL WATER PIPING SHALL BE INSTALLED ON INTERIOR SIDE OF THE BUILDING WALL INSULATION.
- 9. CONTRACTOR SHALL PROVIDE VALVES LOCATED ABOVE LAY-IN CEILING OR 24"x24" CEILING ACCESS PANEL COORDINATE FINAL LOCATION AND SIZE WITH ARCHITECT. PROVIDE BALANCING VALVES FOR HOT WATER RETURN SYSTEM AS REQUIRED.
- 10. ALL SANITARY DRAINAGE PIPING 3" AND SMALLER SHALL BE SLOPED AT  $\frac{1}{4}$ " PER FOOT. PIPING 4" AND LARGER SHALL BE SLOPED AT  $\frac{1}{8}$ " PER FOOT.
- 11. ALL CONDENSATE DRAIN PIPING SHALL BE SLOPED AT  $\frac{1}{8}$ " PER FOOT AND PROVIDE ACCESSIBLE CLEANOUTS AT ALL CHANGES OF DIRECTION.
- 12. VENTS THAT TERMINATE AT THE ROOF SHALL BE A MINIMUM OF 10' FROM ANY FRESH AIR INTAKE.
- 13. REFER TO THE PLUMBING DIAGRAMS FOR GUIDANCE OF INSTALLATION INTENT. CONTRACTOR IS TO PROVIDE ALL COMPONENTS NECESSARY TO MEET THE DESIGN INTENT, WHETHER SHOWN IN DIAGRAM OR NOT.

BUILDING C	GAS LOADS	
SERVICE	INPUT CAPACITY	PIPE SIZE
GAS WATER HEATER	200 MBH	1-1/4 INCH
BURNER	65 MBH	3/4 INCH
TOTAL	265 MBH	1 1/4 INCH



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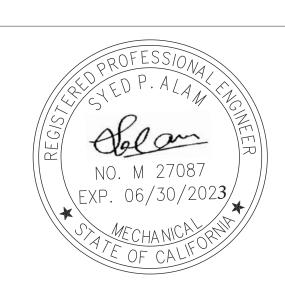
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GAS LAYOUT UNIT 2

DRAWING NO.

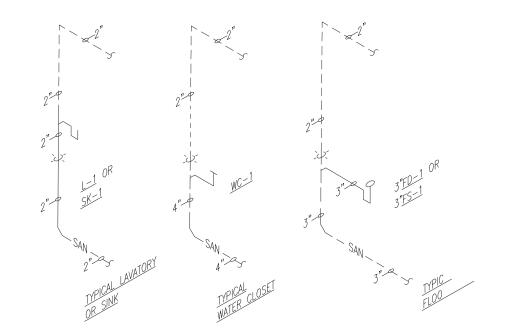
PROJ. NO. PROJ. ENGR. SCALE @ 24X36:

2104

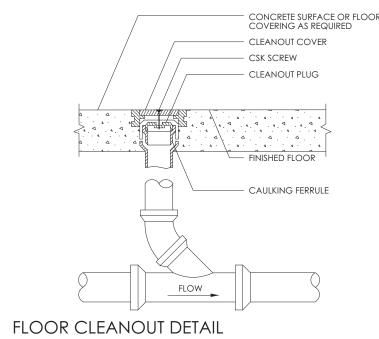
1/4"=1'-0"

P 1 . 0 2

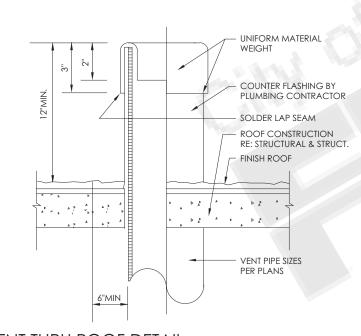
2



1 TYPICAL WASTE AND VENT RISERS
SCALE: NONE

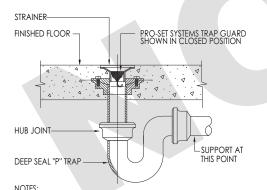


2 PLOOR C



VENT THRU ROOF DETAIL

NO SCALE



NOTES:

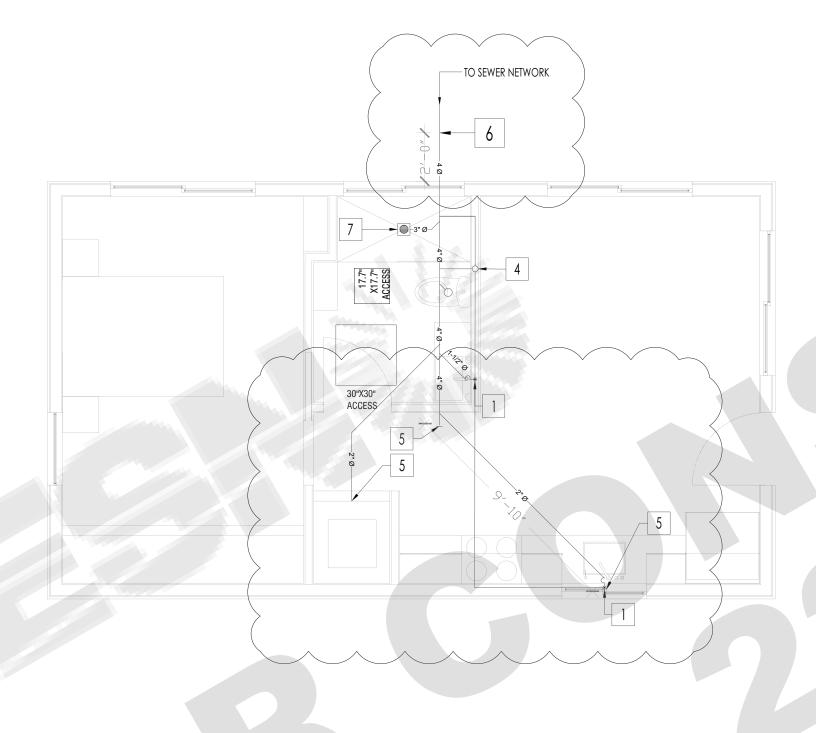
1. TRAP GUARD SHALL BE FACTORY FITTED TO MATCH EACH FLOOR DRAIN (AND FLOOR SINK) BY SIZE, MODEL, AND MANUFACTURER.

2. FLOOR SINK/HUB DRAIN TRAP GUARD INSTALLATION IS SIMILAR.

3. INSTALLATION OF TRAP GUARD TO BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

4. INSERT TRAP GUARD ONLY AFTER FINAL RODDING OF DRAINS. INSTALL TRAP GUARD WITH CLEAR SILICONE CAULK FOR GAS TITE SEAL, FOR DRAIN RODDING AFTER INSTALLATION, INSERT SEWER TAPE THROUGH LIGHTLY GREASED 1-1/2" PVC PIPE TO PROTECT TRAP GUARD.





UNIT 02

CPC 707.4: EACH HORIZONTAL DRAINAGE PIPE SHALL BE PROVIDED WITH A CLEANOUT AT ITS UPPER TERMINAL, ADN EACH RUN OF PIPING, THAT IS MORE THAN 100 FEET IN TOTAL DEVELOPED LENGTH, SHALL BE PROVIDED WITH A CLEANOUT FOR EACH 100 FEET, OR FRACTION THEREOF, IN LENGTH OF SUCH PIPING. AN ADDITIONAL CLEANOUT SHALL BE PROVIDED IN A DRAIANGE LINE FOR EACH AGGREGATE HORIZONTAL CHANGE IN DIRECTION EXCEEDING 135 DEGREES. A CLEANOUT SHALL BE INSTALLED ABOVE THE FIXTURE CONNECTION FITTING, SERVING EACH URINAL, REGARDLESS OF THE LOCATION OF THE URINAL IN THE BUILDING.

	MAXIMUM NUMBER OF DRAINAGE FIXTURE UNITS (dfu)										
Dia	Stacks										
of Pipe (Inches)	Total for Horizontal Branch	Total Discharge into one branch interval	Total for stack of three branch Intervals or less	Total for stack greater than three branch intervals							
1 1/2	3	2	4	8							
2	6	6	10	24							
2 1/2	12	9	20	42							
3	20	20	48	72							
4	160	90	240	500							
5	360	200	540	1,100							
6	620	350	960	1,900							

FIXTURE TYPE	DRAINAGE FIXTURE UNIT VALUE AS LOAD FACTORS
LAVATORY	1
TOILET, PRIVATE	3
BATHTUB	2
LAUNDRY TRAY	2
FLOOR DRAIN 3 INCH TRAP SIZE	3
KITCHEN SINK, DOMESTIC	2

# PLUMBING SHEET NOTES

# SHEET NOTES:

- 1 1-1/2" WASTE DROP AND 2" VENT RISE.
- 2 ~ 2" VENT RISE TO HIGH LEVEL.
- 3 → 1-1/2" VENT RISE TO HIGH LEVEL.
- 4 3" VENT STACK TO ABOVE.
- 5 CLEAN OUT.
- 6 OUTDOOR FLOOR CLEAN-OUT. REFER TO DWG FOR PIPE SIZE.
- 7 → 3" FLOOR DRAIN.
- 8 4" WASTE DROP FROM FLOOR ABOVE
- 9 4" WASTE DROP TO FLOOR BELOW
- 10 3" ROOF VENT CAP
- 11 3" GAS WATER HEATER CONDENSATE DRAIN

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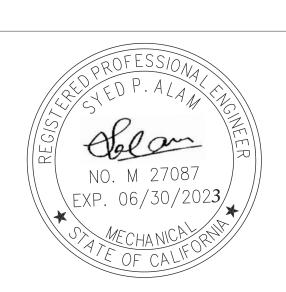
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REV. N	]. DESCRIPTION	DATE	BY
02	FOR APPROVAL	06.22	MN
01	FOR APPROVAL	03.22	MN
00	FOR APPROVAL	12.21	MN

PROJECT:

ADU PROGRAM

DRAINAGE LAYOUT UNIT 2

DRAWING NO.

REV.

P 1.03

2

#### LIST OF SYMBOLS AND SERVICES

9	WALL MOUNTED LED LIGHTING FIXTURE WITH POWER 15VA
0	LIGHT FIXTURE - CEILING SURFACE (x: INDICATES CONTROL REF.) WITH POWER 50VA
O <sub>F1</sub>	RECESSED MOUNTED ROUND LED LIGHTING FIXTURE SIMILAR TO PHILIPS DN 130B D 165 1xLED 10S/840
$\bigoplus$	PENDANT LIGHT
F4	CEILING MOUNTED FAN INCLUDING LIGHTING
F2	WALL SCONCE
F3	LINEAR CABINET UNDER-MOUNT LIGHT
2	OUTDOR FLOOD LIGHT IP67 WITH POWER OF 70VA
	SURFACE MOUNTED VACANCY DETECTOR
S	LIGHT SWITCH - WALL MOUNTED @ +48" AFF UNLESS NOTED SUBSCRIPTS:  2 = 2-POLE SWITCH 3 = 3 WAY SWITCH 4 = 4 WAY SWITCH D = DIMMER SWITCH K = KEY OPERATED SWITCH M = MOMENTARY CONTACT SWITCH P = SWITCH WITH PILOT LIGHT T = THERMAL OVERLOAD SWITCH
	120/240V, 1PH, 3W LOAD CENTER
ф	SINGLE RECEPTACLE - WALL MOUNTED @ +18" AFF UNLESS NOTED
Ф	DUPLEX RECEPTACLE - WALL MOUNTED @ +18" AFF UNLESS NOTED
<del></del>	QUADRUPLE RECEPTACLE - WALL MOUNTED @ +18" AFF UNLESS NOTED
Φ	JUNCTION BOX - WALL MOUNTED - HEIGHT AS INDICATED
	JUNCTION BOX
YxXXA <b>'</b>	NON-FUSED DISCONNECT SWITCH - SIZE AS INDICATED
	CONDUITS IN CEILING
	CONDUITS UNDER TILES

TALLATION	HEIGHT	S:

h1: 23.622 inches

h2: 43.3071 inches.

h3: 47.2441 inches.

#### h4: 70.86 inches. h5: 94.48 inches.

# h6: 60 inches.

#### GENERAL NOTES:

- 1. ALL WORK AND EQUIPMENT UNDER THIS DIVISION SHALL BE IN STRICT COMPLIANCE WITH THE CODES, STANDARDS AND PRACTICES LISTED HEREIN, AND THEIR RESPECTIVE DATES ARE FURNISHED AS THE MINIMUM LATEST REQUIREMENTS.
- A. LIFE SAFETY CODE
- B. NATIONAL FIRE PROTECTION ASSOCIATION C. NATIONAL ELECTRICAL CODE
- D. AMERICAN NATIONAL STANDARDS INSTITUTE

NECESSARY TO COMPLETE THE INSTALLATION.

E. INSTITUTE IF ELECTRICAL AND ELECTRONIC ASSOCIATION F. NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION (NEMA) G. REQUIREMENTS OF LOCAL POWER COMPANY

#### H. BUILDING CODE

- 2. THE ELECTRICAL INSTALLATION SHALL MEET THE APPROVAL OF THE LOCAL GOVERNING AUTHORITIES AND THE OWNER'S REPRESENTATIVE PRIOR TO ACCEPTANCE.
- 3. REFER TO THE ARCHITECTURAL, MECHANICAL, PLUMBING, FIRE PROTECTION, CIVIL, INTERIOR DESIGN, FOR RELATED INFORMATION AND ADDITIONAL INSTALLATION REQUIREMENTS TO BE CONSIDERED AS PART OF THE ELECTRICAL CONTRACT
- 4. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION THE CONTRACTOR IS EXPECTED TO FURNISH ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM. PROVIDE EVERYTHING NECESSARY FOR EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MINOR ITEMS WHICH ARE OBVIOUSLY
- 5. LIGHT SWITCHES SHALL BE MOUNTED 48 INCHES ABOVE FINISHED FLOOR TO CENTER LINE OF THE DEVICE, UNLESS NOTED OTHERWISE. GANG SWITCHES AND DIMMER WITH A COMMON PLATE WHERE TWO (2) OR MORE ARE INDICATED ADJACENT
- 6. RECEPTACLES SHALL BE LOCATED 18" ABOVE FINISHED FLOOR TO CENTER LINE OF DEVICE. UNLESS NOTED OTHERWISE. ABOVE-COUNTER RECEPTACLES SHALL BE MOUNTED 6" ABOVE BACK SPLASH TO CENTERLINE OF DEVICE UNLESS NOTED
- 7. USE GALVANIZED RIGID STEEL CONDUIT WHERE EPOSED TO EXTERIOR CONDITIONS OR WHERE EXPOSED IN ANY LOCATIONS WHERE SUBJECT TO MECHANICAL DAMAGE. EMT SHALL BE PROVIDED WITH SET SCREW STEEL FITTINGS FOR INSTALLATION IN ALL CONCEALED WALLS AND CEILINGS IN DRY AREAS. ALL CONDUIT FOR LIGHTING PROTECTION SHALL BE PVC, SCHEDULE 40. UNLESS OTHERWISE NOTED, PVC MAY BE USED WHERE BURIED UNDER GRADE AND ENCASED IN CONCRETE SLAB OR WALLS. ALUMINUM CONDUIT IS NOT ALLOWED. EMT CAN BE USED IN DRY AREAS WHEN INSTALLED 10 FEET ABOVE FINISHED
- 8. ALL CONDUITS IN PUBLIC SHALL BE CONCEALED UNLESS NOTED OTHERWISE.
- P. ALL OUTDOOR LIGHTING PERMANENTLY ATTACHED TO THE RESIDENCE OR OTHER BUILDINGS ON THE SAME. 10. LOT SHALL BE CONTROLLED BY MANUAL ON AND OFF SWITCH DOES NOT OVERRIDE TO ON, AND ONE OF THE FOLLOWING
- AUTOMATIC TYPES: (CALIFORNIA ENERGY CODE SECTION 150 (K) (3). TYPES ARE
- A. PHOTO CONTROL AND MOTION SENSOR.

lighting off during daylight hours

- PHOTO CONTROL AND AUTOMATIC TIME SWITCH CONTROL ASTRONOMICAL TIME CLOCK THAT AUTOMATICALLY TURNS THE OUTDOOR LIGHTING OFF DURING DAYLIGHT HOURS. ENERGY MANAGEMENT CONTROL SYSTEM (EMCS) THAT PROVIDES THE FUNCTIONALITY OF AN ASTRONOMICAL TIME CLOCK,
- DOES NOT HAVE AN OVERRIDE OR BYPASS SWITCH THAT ALLOWS THE LUMINAIRE TO BE ALWAYS ON, AND IS PROGRAMMED TO TURN THE OUTDOOR LIGHTING OFF DURING DAYLIGHTS HOUR.

ALL outdoor lighting permanently attached to the residence or other buildings on the same.

lot shall be controlled by a manual ON and Off switch that does not override to ON, and one of the following automatic control types: (California Energy Code section 150. (k)(3))

a)Photocontrol and motion sensor b)Photocontrol and automatic time switch control c)Astronomical time clock that automatically turns the outdoor

d)Energy management control system (EMCS) that provides the functionality of an astronomical time clock, does not have an override or bypass switch that allows the luminaire to be always ON, and is programmed to turn the outdoor lighting off during daylight hours.

# **ELECTRICAL ABBREVIATIONS**

WEATHER PROOF

AFF	ABOVE FINISHED FLOOR	HOA	HAND-OFF-AUTOMATIC		WITCH BOARD
AFG	ABOVE FINISHED GRADE	HP	HORSEPOWER	SQFT	SQUARE FEET
A/C	AMP INTERRUPTING CURRENT				
AL	ALUMINUM	IG	ISOLATED GROUND	TL	TWISTLOCK
ATS	AUTOMATIC TRANSFER SWITCH			TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
		JBOX	JUNCTION BOX	TVP	TYPICAL
BFG	BELOW FINISHED GRADE				
BKBD	BACKBOARD	KVA	KILOVOLT-AMPS	UG	UNDERGROUND
5.135	5, 16,156, 11,15	KW	KILOWATT	UMC	UNIFORM MECHANICAL CODE
С	CONDUIT		NIEG IVI III	UON	UNLESS OTHERWISE NOTED
CU	COPPER	MCC	MOTOR CONTROL CENTER	UPS	UNINTERRUPTABLE POWER SUPPLY
00	OOTTER	MPC	MINI POWER CENTER	013	OTHITIERROLL TO WER SOLLET
DB	DISTRIBUTION BOARD	1411 C	WINT OWER CENTER	V	VOLTS
<i>Db</i>	DISTRIBUTION DOT RE	NC	NORMALLY CLOSED	VA	VOLT-AMPS
(E)	EXISTING TO REMAIN	NEC	NATIONAL ELECTRIC CODE	V/PH/A	VOLTS/PHASE/AMPS
(E) EA	EACH	NF	NON-FUSED	V/PH/HZ	VOLTS/PHASE/HERTZ
EM	EMERGENCY	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	VFD	CARIABLE FREQUENCY DRIVE - PROVIDED BY
EMCS	ENERGY MANAGEMENT CONTROL SYSTEM	NIC	NOT IN CONTRACT	MECHANICA	
EWC	ELECTRIC WATER COOLER	NL	NIGHT LIGHT	WP	WEATHER PROOF (NEMA 3R)
_		NO	NOT TO SCALE	4.15	
F	FUSE (DUAL ELEMENT, TIME DELAY)	7.7	BULLBOX	(X)	EXISTING TO BE REMOVED
FBO	FINISHED BY OTHERS	PB	PULLBOX	XFMR	TRANSFORMER
FPN	FUSE PER NAMEPLATE	PNL	PANEL BOARD	XP	EXPLOSION PROOF
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	(R) RGS	EXISTING TO BE RELOCATED		
GND	GROUND	RGS	RIGID GALVANIZED STEEL		

# **ELECTRICAL SPECIFICATIONS**

- DO NOT SCALE DRAWINGS. VERIFY DIMENSIONS IN FIELD PRIOR TO COMMENCEMENT OF WORK
- 2. WHEREVER THE WORD "PROVIDE" IS USED, IT SHALL MEAN TO "PROVIDE AND INSTALL".
- 3. FINAL CONNECTIONS TO EQUIPMENT SHALL BE PER MANUFACTURER'S APPROVED WIRING DIAGRAMS, DETAILS AND INSTRUCTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.
- 4. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO ESTABLISH A STANDARD OF QUALITY. THE ENGINEER RESERVES THE RIGHT TO APPROVE METHODS AND MATERIALS NOT REFLECTED HEREIN.
- 5. CONTRACTOR SHALL REVIEW ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND OTHER RELATED DRAWINGS PRIOR TO BID.
- 6. CONTRACTOR SHALL VISIT SITE PRIOR TO BID AND VERIFY THAT CONDITIONS ARE AS INDICATED IN THE CONTRACT DOCUMENTS. CONTRACTOR
- SHALL INCLUDE IN HIS BID, ANY COSTS REQUIRED TO MAKE HIS WORK MEET THE CONTRACT SCOPE UTILIZING EXISTING CONDITIONS.
- 7. WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER TO THE SATISFACTION OF THE ARCHITECT.
- 8. WORK, MATERIALS AND EQUIPMENT SHALL CONFORM TO THE LATEST EDITIONS OF LOCAL, STATE AND NATIONAL CODES AND ORDINANCES.
- 9. PROVIDE PERMITS AND INSPECTIONS REQUIRED.
- 10. GUARANTEE THE INSTALLATION AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP WHICH MAY OCCUR UNDER NORMAL USAGE FOR A PERIOD OF ONE YEAR AFTER OWNER'S ACCEPTANCE, DEFECTS SHALL BE PROMPTLY REMEDIED WITHOUT COST TO THE OWNER.
- 11. PROVIDE RECORD DRAWINGS TO ENGINEER. DRAWINGS SHALL INCLUDE ALL ADDENDUM ITEMS, CHANGE ORDERS, ALTERATIONS, REROUTINGS, ETC.
- 12. VERIFY SPECIFIC LOCATION OF EQUIPMENT TO BE FURNISHED BY OTHERS PRIOR TO ROUGH-IN.
- 13. ELECTRICAL SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE CORRECTIONS NECESSARY AT NO COST TO OWNER
- 14. RECESSED LIGHT FIXTURES INSTALLED IN GYP. BOARD OR PLASTER CEILINGS SHALL HAVE PLASTER FRAMES INSTALLED PRIOR TO CEILING MATERIAL
- 15. RECESSED FIXTURES INSTALLED INDOORS SHALL BE THERMALLY PROTECTED.
- 16. SEE DIVISION 15 DRAWINGS FOR LOCATION OF MECHANICAL EQUIPMENT. PROVIDE SERVICE TO AND CONNECT EQUIPMENT AS REQUIRED.
- 17. PROVIDE EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS.
- 18. ALL ELECTRICAL SYSTEMS COMPONENTS SHALL BE LISTED OR LABELED BY U.L. OR OTHER RECOGNIZED TESTING FACILITY.
- 19. WIRE TERMINATION PROVISIONS FOR PANELBOARDS, CIRCUIT BREAKERS, SAFETY SWITCHES, AND ALL OTHER ELECTRICAL APPARATUS SHALL BE LISTED AS SUITABLE FOR 75 DEGREE C.
- 20. THE FOLLOWING CONDUCTOR SIZES SHALL BE UTILIZED FOR 20 AMP CIRCUITS PERTAINING TO DISTANCES (IN FEET) INDICATED:

120VOLT, 1PH	CONDUCTOR	240 VOLT, (1PH
0-64	#12AWG	0-129
65106	#10AWG	130-212
107-160	#8AWG	213-321

NOTE: BASED ON 75°C COPPER CONDUCTORS INSTALLED IN EMT WITH 16AMP LOAD @ 85% P.F.

- 21. CONTRACTOR SHALL REVIEW ARCHITECTURAL, STRUCTURAL AND MECHANICAL DRAWINGS AND SHALL PROVIDE LIGHTS, SWITCHES, RECEPTACLES, EQUIPMENT CONNECTIONS, ETC., AND ASSOCIATED CIRCUITING IN NEW AND REMODELED AREAS, EVEN IF SUCH AREAS ARE NOT SHOWN ON
- ELECTRICAL DRAWINGS. LAYOUTS, FIXTURE TYPES, QUANTITIES AND SPACING SHALL BE IN ACCORDANCE WITH SIMILAR AREAS ON THIS PROJECT.
- CONTRACTOR SHALL INCLUDE COSTS FOR THE ABOVE IN HIS BID. IN ADDITION, CONTRACTOR SHALL PROVIDE LAYOUT DRAWINGS FOR WORK IN SUCH AREAS AND SUBMIT FOR APPROVAL PRIOR TO ROUGH-IN.
- 22. WIRE SHALL BE COPPER, 75 DEGREES C RATED FOR GENERAL USE, FOR WIRING WITHIN 3 INCHES OF FLUORESCENT BALLASTS WIRE SHALL BE COPPER, MINIMUM 90 DEGREES C RATED, SIZES INDICATED ARE FOR INSTALLATION IN A MAXIMUM 30 DEGREES C AMBIENT, CONDUCTOR AMPACITY SHALL BE DERATED FOR HIGHER AMBIENT INSTALLATIONS. 600 VOLT COMPACT ALUMINUM WIRE AND CABLE IN SIZES 1/0 AND LARGER MAY BE SUBSTITUTED FOR COPPER ON SERVICES AND FEEDERS IF AMPACITY IS EQUIVALENT TO OR GREATER
- 23. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING EQUIPMENT WHICH IS DAMAGED DUE TO INCORRECT FIELD WIRING PROVIDED UNDER THIS SECTION OR FACTORY WIRING IN EQUIPMENT PROVIDED UNDER THIS SECTION.
- 24. CONTRACTOR'S FAILURE TO ORDER OR RELEASE ORDER FOR MATERIALS AND/OR EQUIPMENT WILL NOT BE ACCEPTED AS A REASON TO SUBSTITUTE ALTERNATE MATERIALS, EQUIPMENT OR INSTALLATION METHODS.
- 25. ELECTRICAL SYSTEMS SHALL BE COMPLETE, OPERABLE AND READY FOR CONTINUOUS OPERATION AT COMPLETION OF PROJECT.
- 26. RECEPTACLES WHICH ARE SHOWN WALL MOUNTED ON THE ELECTRICAL DRAWINGS ON WALLS WHICH, ON THE ARCHITECTURAL DRAWINGS AND ELEVATIONS ARE SHOWN AS GLASS OR PARTITIONS, SHALL BE FLUSH FLOOR DUPLEX RECEPTACLES MOUNTED ADJACENT TO BAS OR WALLS.
- 27. RECEPTACLES AT COUNTER SHALL BE MOUNTED WITH THEIR LONG AXIS HORIZONTAL AT +46" UNLESS NOTED.
- 28. FLUSH FLOOR RECEPTACLE OUTLETS SHALL BE WIREMOLD 862 SERIES. PROVIDE CARPET OR TILE FLANGE TO MATCH FLOOR FINISH.
- 29. THE COLOR OF THE DEVICES AND COVER PLATES SHALL BE AS DIRECTED BY ARCHITECT. IN DAMP OR WET LOCATIONS COVER PLATES SHALL BE STAINLESS STEEL. IN DRY LOCATIONS COVER PLATES SHALL BE SMOOTH HIGH ABUSE NYLON OR EQUIVALENT. PROVIDE COVER PLATES FOR SWITCHES, RECEPTACLES, TELEPHONE, TELEVISION, COMPUTER AND J-BOX OUTLETS AS REQUIRED.
- 30. ROMEX CABLE WITH A GROUNDING CONDUCTOR MAY BE USED WHERE PERMITTED BY BOTH THE N.E.C. AND LOCAL ORDINANCES.
- 31. DISCONNECT SWITCHES SHALL BE GENERAL DUTY TYPE. FUSIBLE SWITCHES SHALL ACCEPT CLASS 'R' FUSES ONLY AND REJECT ALL OTHERS.
- 32. FINAL CONNECTIONS TO VIBRATING EQUIPMENT SHALL BE WITH FLEX (LIQUIDTIGHT FOR EXTERIOR APPLICATIONS) AND APPROVED FITTINGS. DO NOT SECURE CONDUITS, DISCONNECTS OR DEVICES TO DUCTWORK OR MECHANICAL EQUIPMENT.
- 33. THE ENGINEER OF RECORD HAS PERFORMED SHORT CIRCUIT CALCULATIONS AND THE AIC RATINGS INDICATED FOR EACH DEVICE IS ADEQUATE TO PROTECT THE EQUIPMENT AND THE ELECTRICAL SYSTEM.
- 34. THE ENGINEER OF RECORD HAS PERFORMED VOLTAGE DROP CALCULATIONS AND ALL BRANCH CIRCUITS AND FEEDERS COMPLY WITH NEC 210-19(A) FPN NO4.
- 35. THE CONTRACTOR SHALL PROVIDE 120V CONNECTION TO NEAREST MAINTENANCE RECEPTACLE WHERE REQUIRED FOR CONDENSATE PUMPS ASSOCIATED WITH FAN COIL UNITS. COORDINATE WITH MECHANICAL CONTRACTOR.
- 36. THE CONTRACTOR SHALL COORDINATE THE SPECIFIC LOCATION, MOUNTING HEIGHT, ROTATION, TYPE, COLOR, ETC. OF ALL DEVICES PRIOR TO INSTALLATION.
- 37. CONNECTIONS TO HYDROMASSAGE BATHTUBS, JACCUZZI TUBS OR SIMILAR EQUIPMENT SHALL BE MADE IN ACCORDANCE WITH ARTICLE 680.70 OF THE CEC 2019. PROVIDE BONDING AS REQUIRED BY ARTICLE 680.74 OF THE CEC 2019.
- 38. ALL INDOOR FLUORESCENT FIXTURES THAT UTILIZE DOUBLE-ENDED LAMPS AND CONTAIN BALLAST(S) THAT CAN BE SERVICED IN PLACE OR BALLASTED LUMINARIES THAT ARE SUPPLIED FROM MULTIWIRE BRANCH CIRCUITS AND CONTAIN BALLAST(S) THAT CAN BE SERVICED IN PLACE SHALL COMPLY WITH 410.73 (G) OF THE CEC 2019.
- 39. CEILING MOUNTED SMOKE AND CARBON MONOXIDE DETECTORS MUST COMPLY WITH U.L. 2075 AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.
- 40. ALL SMOKE DETECTORS AND COMBINATION SMOKE/CARBON MONOXIDE DETECTORS SHALL BE HARDWIRED ON SAME CIRCUIT AND HAVE A BATTERY BACKUP SYSTEM.
- 41. WHEN MORE THAN EITHER ONE (1) SMOKE ALARM OR MORE THAN ONE (1) CARBON MONOXIDE ALARM IS REQUIRED TO BE INSTALLED WITHIN AN INDIVIDUAL DWELLING UNIT, ALL ALARM DEVICES SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTUATION OF ONE ALARM WITH ACTIVATE ALL OF THE ALARMS IN THE INDIVIDUAL UNIT. SMOKE AND CARBON MONOXIDE ALARMS SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS. A. SMOKE ALARMS IN EACH SLEEPING ROOM.
  - B. SMOKE ALARMS OUTSIDE OF EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS.
  - C. SMOKE ALARMS ON EACH ADDITIONAL STORY OF THE DWELLING INCLUDING BASEMENTS BUT NOT INCLUDING CRAWL SPACE AND UNINHABITABLE ATTICS. IN DWELLINGS OR DWELLING UNITS WITH SPLIT LEVELS AND WITHOUT AN INTERVENING DOOR BETWEEN THE ADJACENT LEVELS, A SMOKE ALARM INSTALLED ON THE UPPER LEVEL SHALL SUFFICE FOR THE ADJACENT LOWER LEVEL PROVIDED
  - THAT THE LOWER LEVEL IS LESS THAN ONE FULL STORY BELOW THE UPPER LEVEL. D. CARBON MONOXIDE ALARMS OUTSIDE OF SLEEPING AREAS IN THE IMMEDIATE VICINITY OF THE BEDROOMS IN DWELLING UNITS WITHIN WHICH FUEL-FIRED APPLIANCES ARE INSTALLED AND IN
  - DWELLING UNITS THAT HAVE ATTACHED GARAGES. E. CARBON MONOXIDE ALARMS WITHIN EACH BEDROOM WHICH CONTAINS A FUEL-FIRED APPLIANCE.
- 43. ALL BRANCH CIRCUITS THAT SUPPLY 125-VOLT, SINGLE PHASE, 15 AND 20 AMP BRANCH CIRCUITS SUPPLYING OUTLETS INSTALLED IN DWELLING UNIT FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, OR SIMILAR ROOMS OR AREAS SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER, COMBINATION-TYPE, INSTALLED TO PROVIDE PROTECTION OF THE BRANCH CIRCUIT. CEC 2019 ARTICLE 210.12 (A).
- 44. ALL ATTIC ACCESSES SHALL BE PROVIDED WITH A SWITCHED LIGHT AND 120 VOLT GFI OUTLET AT OR NEAR THE FORCED AIR UNIT. LOCATE LIGHT SWITCH AT THE ATTIC ACCESS OPENING.
- 45. ALL RECESSED LED STRIP LIGHTING SALL BE BY KLUS.
- 46. Receptacles inside kitchen shall comply with following:
- a) Receptacle outlets shall not be installed in a face up position in the work surfaces. b) Receptacle outlets shall be located on or above, but not more than 20 in. above the countertop or work surface. (CEC section 210.52(C)(5))
- c) Receptacle outlets shall be permitted to be mounted not more than 12 in. below the countertop or worksurface provided the countertop does not extend more than 6 in. beyond its support base. (CEC section 210.52(C)(5) Exception)
- 47. Energy management control system (EMCS) that provides the functionality of an astronomical time clock, does not have an override or bypass switch that allows the luminaire to be always ON, and is programmed to turn the outdoor lighting off during daylight hours.



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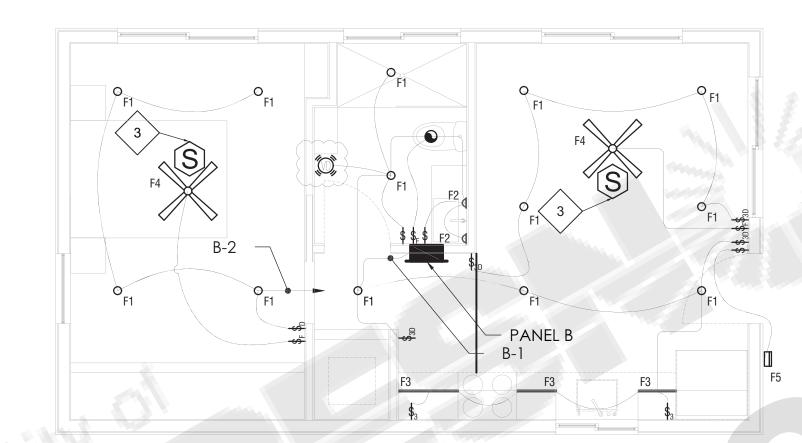
REV. NO.	DESCRIPTION	DATE	BY
02	FOR APPROVAL	06.22	MN
01	FOR APPROVAL	03.22	MN
00	FOR APPROVAL	12.21	MN

PROJECT:

ADU PROGRAM

**ELECTRICAL SPECS** LEGENDS & SYMBOLS

2104 DRAWING NO.



UNIT 02

# SHEET NOTES:

- PROVIDE HEAVY DUTY JUNCTION BOX, FLUSH IN CEILING SECURED TO STRUCTURE

FURNISH AND INSTALL DOOR SWITCH TO ACTIVATE LIGHT WHEN DOOR IS OPENED EQUAL TO CARTER-HOFFMANN #18602-0013

- FURNISH AND INSTALL SMOKE OR COMBINATION SMOKE AND CARBON MONOXIDE DETECTOR AS REQUIRED. INTERLOCK WITH OTHER DETECTORS

# GENERAL NOTES

- REFER TO FIXTURE SCHEDULE/LEGEND FOR ADDITIONAL INFORMATION ON LIGHT FIXTURES 2. NON LOW VOLTAGE SWITCHES SHALL BE DECORA TYPE WITH SLIDE DIMMER. SWITCHES AND PLATE COLORS SHALL BE WHITE.
- OUTLET BOXES OR OUTLET BOX SYSTEM USED AS SOLE SUPPORT OF A CEILING SUSPENDED PADDLE FAN SHALL BE LISTED, SHALL BE MARKED BY THEIR MANUFACTURER AS SUITABLE FOR THIS PURPOSE. AND SHALL NOT SUPPORT CEILING-SUSPENDED (PADDLE) FANS THAT WEIGHT MORE THAN 701b. FOR OUTLET BOXES OUR OUTLET BOX SYSTEM DESIGNED TO SUPPORT CEILING-SUSPENDED (PADDLE) FANS THAT WEIGHT MORE THAN 35 lb. THE REQUIRED MARKING
- SHALL ICLUDE THE MAXIMUM WEIGHT TO BE SUPPORTED. (CEC 2019 ARTICLE 314.27 (C)) 4. IUMINAIRES IN CLOTHES CLOSETS SHALL BE INSTALLED IN ACCORDANCE WITH CEC 2019 ARTICLE 410.16
- 5. ALL permanently installed lighting fixtures shall be high-efficacy luminaires in accordance with Table 150.0-A of California Energy Code. Provide a complete luminaire schedule on the Electrical plans for all lighting, which specifies luminaire/fixture type and type of lamps for each luminaire/fixture. (CEC 2019 section 150.0(k)(1)(A))
- ALL 120 VOLTE, SINGL PHASE 15 AND 20 AMPERE BRANCH CIRCUIT SUPPLYINH OUTLETS INSTALLED IN DWELLING UNIT FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, OR SIMILAR AREAS SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER, COMBINATION TYPE INSTALLED TO PROVIDE PROTECTION OF THE BRANCH CIRCUIT. (CEC 2019 ARTICLE 210.12(A))



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REV. NO.	DESCRIPTION	DATE	BY
02	FOR APPROVAL	06.22	MN
01	FOR APPROVAL	03.22	MN
00	FOR APPROVAL	12.21	MN

PROJECT:

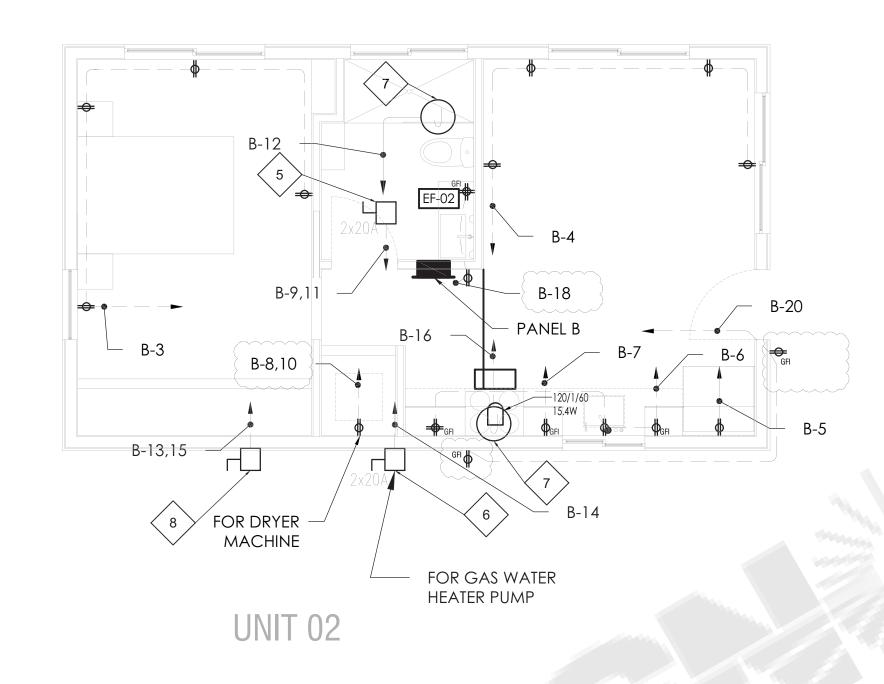
**ADU PROGRAM** 

TITLE: LIGHTING LAYOUT UNIT 2

SCALE @ 24X36: PROJ. NO. PROJ. ENGR. 1/4"=1'-0" 2104

DRAWING NO.

E - 1 . 0 1



Branch Panel: ADU UNIT 02 PANEL B Location: ADU ENTRANCE Supply From: UTILITY METER Mounting: Recessed Enclosure Type 1	Volts: Phases: Wires:					A.I.C Rating Mains Type Mains Ratin	: МССВ	
DESCRIPTION	VA	TRIP AMPS		A B		TRIP AMPS	VA	DESCRIPTION
Lighting Living Room	370	15	1	$\mathbf{H}$	2	15	170	Lighting Bed Room
Sockets Bed Room	1080	20	3	-	4	20	1080	Sockets Living Room
Power Socket	1000	20	5	-	6	20	810	Sockets Kitchen
Power Socket	1000	20	7	-	8	20	500	Dryer Machine
Indoor Unit	629.72	20	9		10	20	500	Tailet Evhaust For
	629.72		11 13		12 14	20	30	Toilet Exhaust Fan
Outdoor Unit	2123.06 2123.06	20	13		16	20	180 20	Gaz Water Heater Pump Kitchen Hood
Spare	2123.00	20	17	-	18	20	540	Socket Toilet & Living Room
Spare		20	19		20	20	540	Sockets Outdoor
Spare		20	21		22	20	340	Spare
Space		20	23	-	24	20		Space
Space			25		26			Space
Space			27		28			Space
Space			29		30			Space
					<del>/ / /</del>			
				Ш				
					Ш			
TOTAL (A):						Mains Rating	45A	
TOTAL (B):								
TOTAL (C):								
IOIA	13325.6	VA						
	LIGHT	Mech.	SOCKET	Kitch	nen TOTAL	$\neg$		
CONNECTED		5715.552	4050	302				
DEMAND FACTOR		0.3	0.5	0.6		.55		
DEMAND LOAD		1714.6656	2025	181		666		
SEM, WE EST	, 310	1711.0030	2023		0051.0			

# SHEET NOTES: 3 ROUTE CABLING FOR AUTOMATIC GARAGE DOOR SENSORS AND PUSH BUTTON 5 DISCONNECT SWITCH FOR INDOOR UNIT 6 JUNCTION BOX FOR HEAT PUMP WATER HEATER 7 JUNCTION BOX FOR EXHAUST FAN 8 DISCONNECT SWITCH FOR OUTDOOR UNIT

# GENERAL NOTES

- 1. ALL 120 VOLTE, SINGL PHASE 15 AND 20 AMPERE BRANCH CIRCUIT SUPPLYINH OUTLETS INSTALLED IN DWELLING UNIT FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLWAYS, OR SIMILAR AREAS SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER, COMBINATION TYPE INSTALLED TO PROVIDE PROTECTION OF THE BRANCH CIRCUIT. (CEC 2019 ARTICLE 210.12(A))
- 2. IN EVERY KITCHEN, FAMILY ROOM, DINING ROOM, LIVING ROOM, PARLOR, LIBRARY, DEN, SUNROOM, BEDROOM, RECREATION ROOM OR SIMILAR ROOM OR AREA OF DWELLING UNITS RECEPTACLE OUTLETS SHALL BE INSTALLED IN ACCORDANCE WITH THE GENERAL PROVISIONS SPECIFIED IN THE FOLLOWING ARTICLES.
- a. CEC 2019 ARTICLE 210.52(A) (1) SPACING. RECEPTACLES SHALL BE INSTALLED SI THAT NO POINT ALONG THE FLOOR LINE OF THE WALL IS MORE THAN 6-FEET FROM A RECEPTACLE.
- b. CEC 2019 article 210.52(a) (2) AS AMENDED WALL SPACE. ANY WALL 24-INCHES OR MORE IN LENGTH SHALL BE PROVIDED WITH A RECEPTACLE OUTLET. WALL SPACE SHALL INCLUDE AROUND CORNERS, THE FIRST SLIDING PANEL OF A SLIDING DOOR, FIXED ROOM DEVIDERS SUCH AS A FREESTANDING BAR TYPE COUNTER. WALL SPACE NED NOT INCLUDE THE SPACE BEHIND OPERABLE DOORS. AND NEED NOT INCLUDE ENTRIES, HALLWAYS ETC. LESS THAN 5-FEET WIDE LOCATED IN BEDROOMS.
- c. CEC ARTICLE 210.52(A) (3) AS AMENDED FLOOR RECEPTACLES.
- 3. IN EVERY KITCHEN, FAMILY ROOM, DINING ROOM, LIVING ROOM, PARLOR, LIBRARY, DEN, SUNROOM, BEDROOM, RECREATION ROOM OR SIMILAR ROOM OR AREA OF DWELLING UNITS, ALL 125 VOLT 15 AND 20 AMP RECEPTACLES SHALL BE LISTED TAMPER-RESISTANT RECEPTACLES CEC 2019 406.12)



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# PROJECT:

ADU PROGRAM

POWER LAYOUT UNIT 2

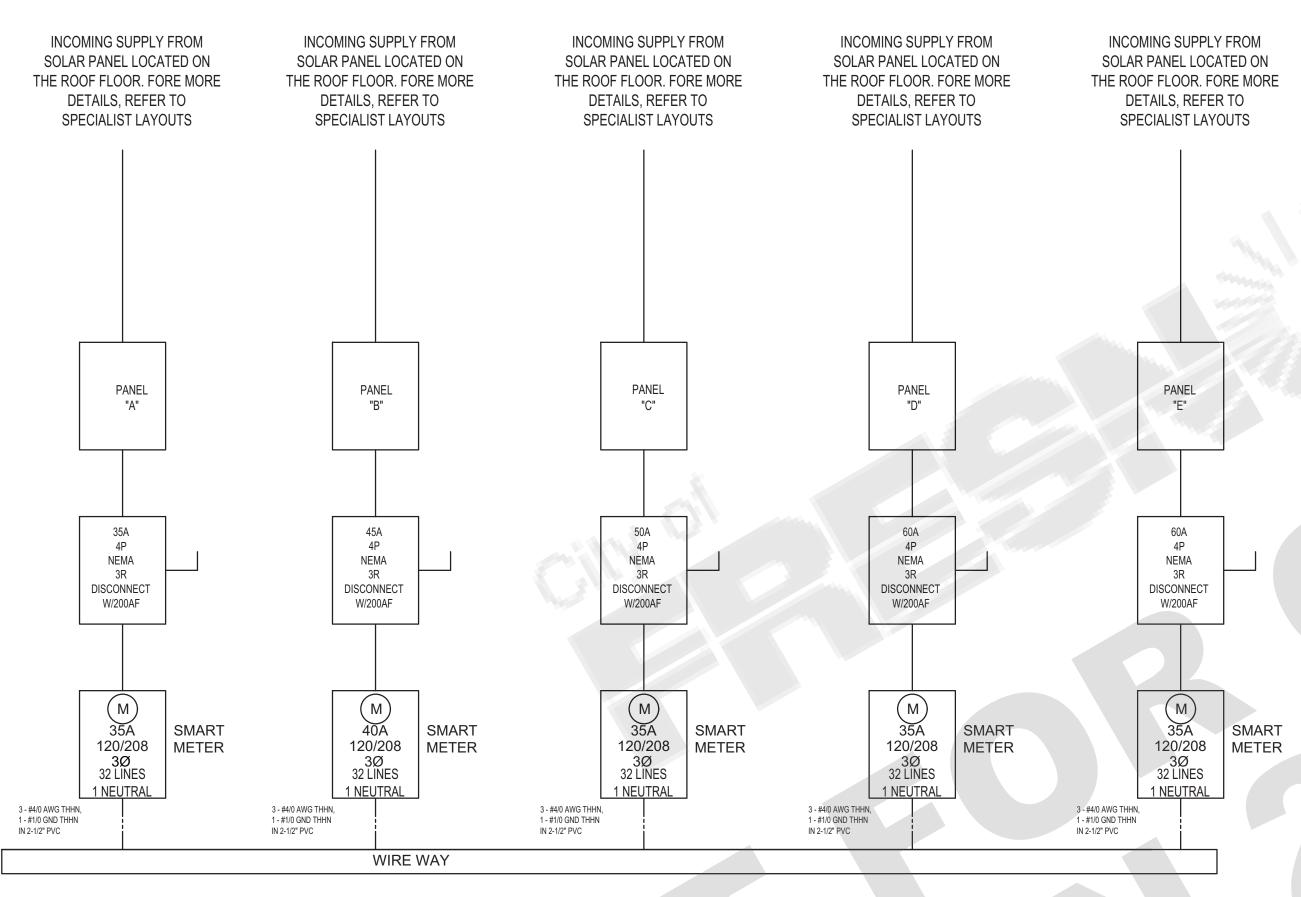
PROJ. NO. PROJ. ENGR. SCALE @ 24X36:

1/4°=1'-0°

DRAWING NO.

E - 2.01

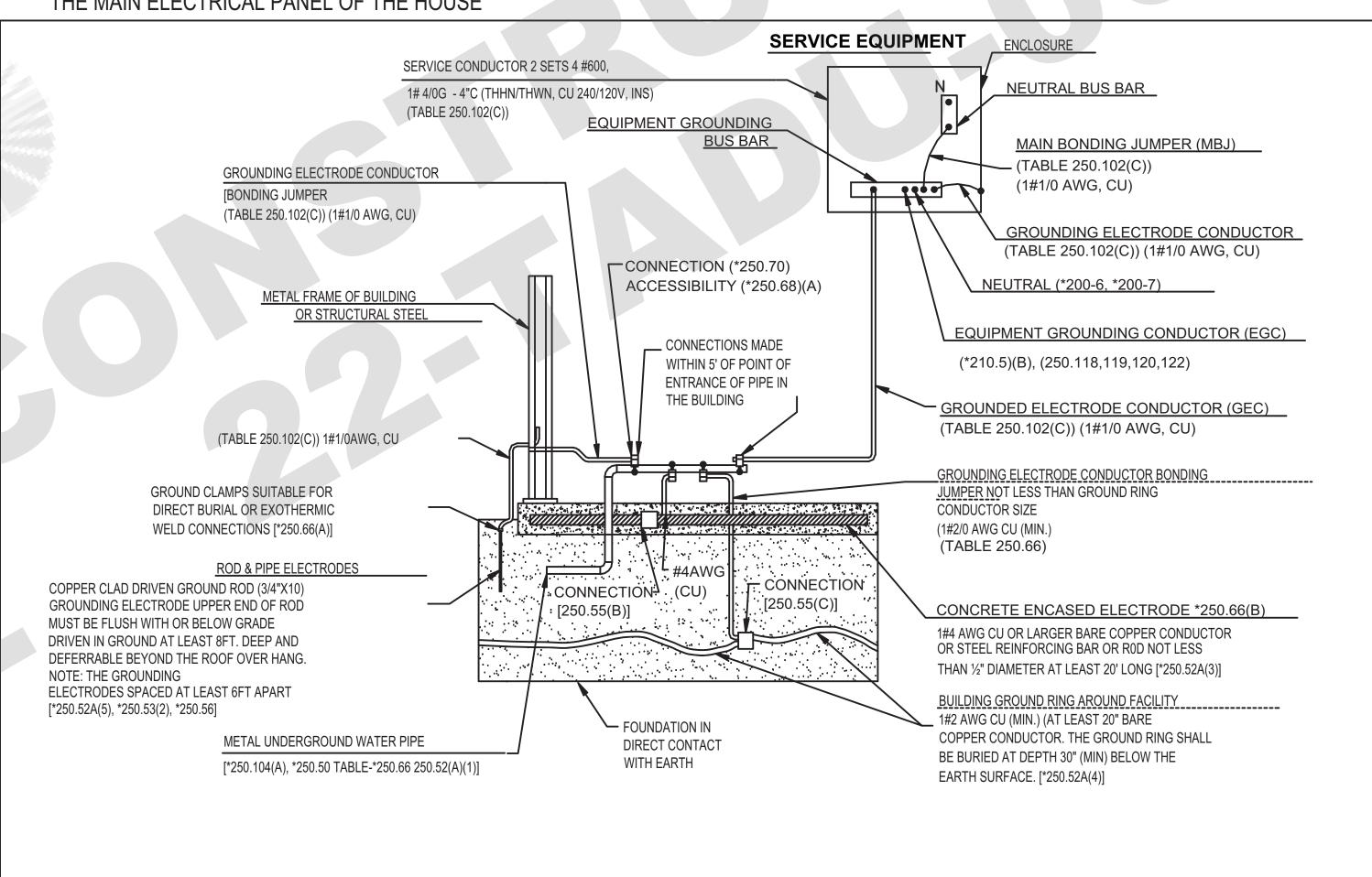
2



POWER RISER DIAGRAM

# **UFER GROUND NOTE:**

ALL STEEL REBARS MEASURING 1/2 " OR MORE IN DIAMETER AND 20 ' OR LONGER IN LENGTH THAT IS ENCASED IN NOT LESS THAN 2 INCHES OF CONCRETE SHALL BE BONDED TO THE BUILDING'S GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH CEC 250 (ELECTRICAL SUB CODE) SECTION 250.52(A)(3). THE "UFER" GROUND CAN BE 20 L.F. OF #2 OR #4 COPPER WIRING LAID INSIDE THE FOOTING AND THE SAME WIRE IS LONG ENOUGH TO REACH TO THE LOCATION OF THE MAIN ELECTRICAL PANEL OF THE HOUSE. UFER GROUND CAN BE (1) L-SHAPED PIECE OF #4 STEEL REBAR CONNECTED TO THE OTHER STEEL REBAR IN THE FOOTING AND STICKING OUT IN SUFFICIENT LENGTH FOR CONNECTION AT THE LOCATION OF THE MAIN ELECTRICAL PANEL OF THE HOUSE



# DETAIL "G" OF GROUNDING ELECTRODE SYSTEM (\*250.50) & GROUNDING ELECTRODES (\*250.52) AS SERVICE

SCALE: NTS

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01	FOR APPROVAL	03.22	MN
00	FOR APPROVAL	12.21	MN

PROJECT:

ADU PROGRAM

LINE DIAGRAM

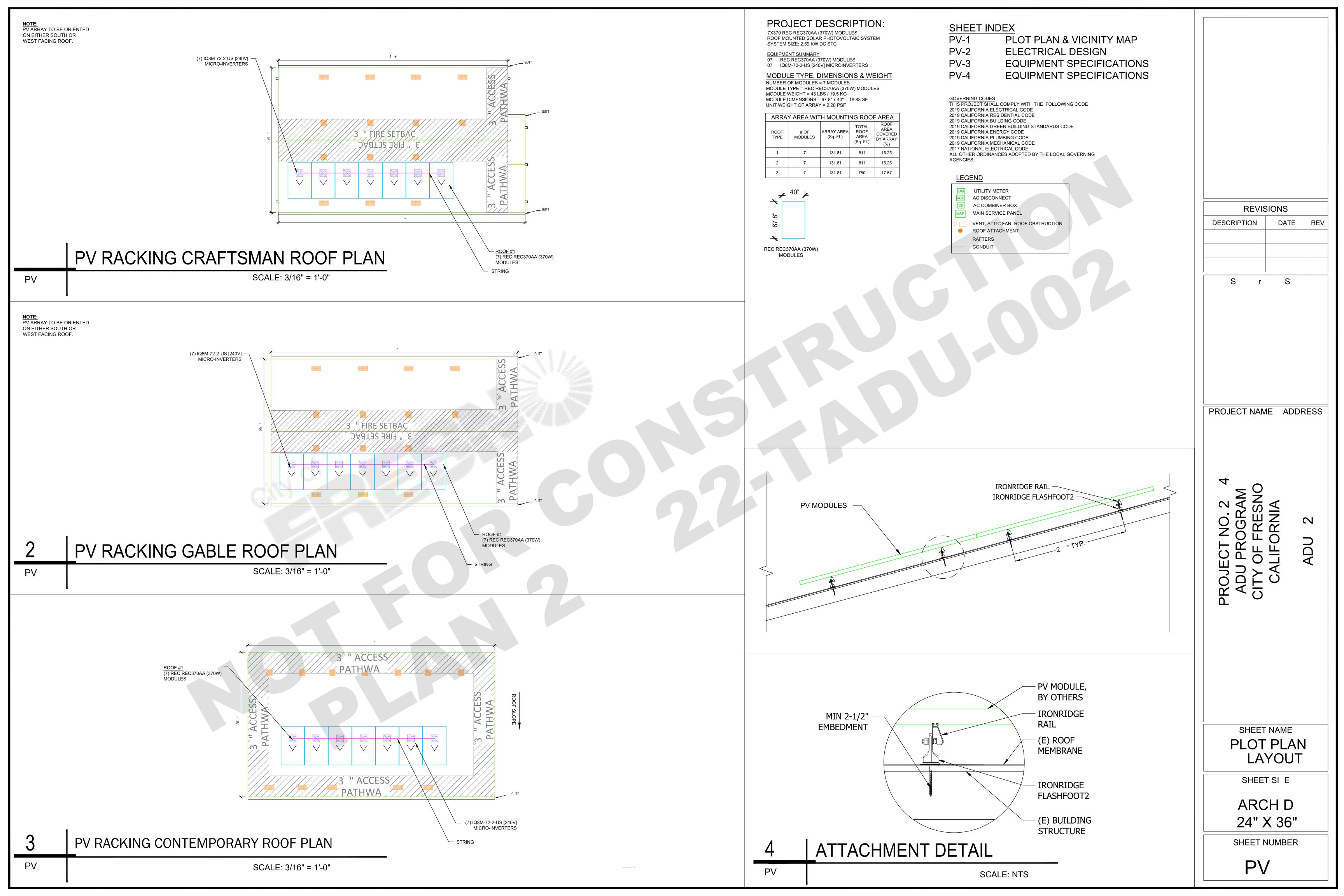
PROJ. NO. PROJ. ENGR. SCALE @ 24X36:

2104

DRAWING NO.

E - 0 . 0 1

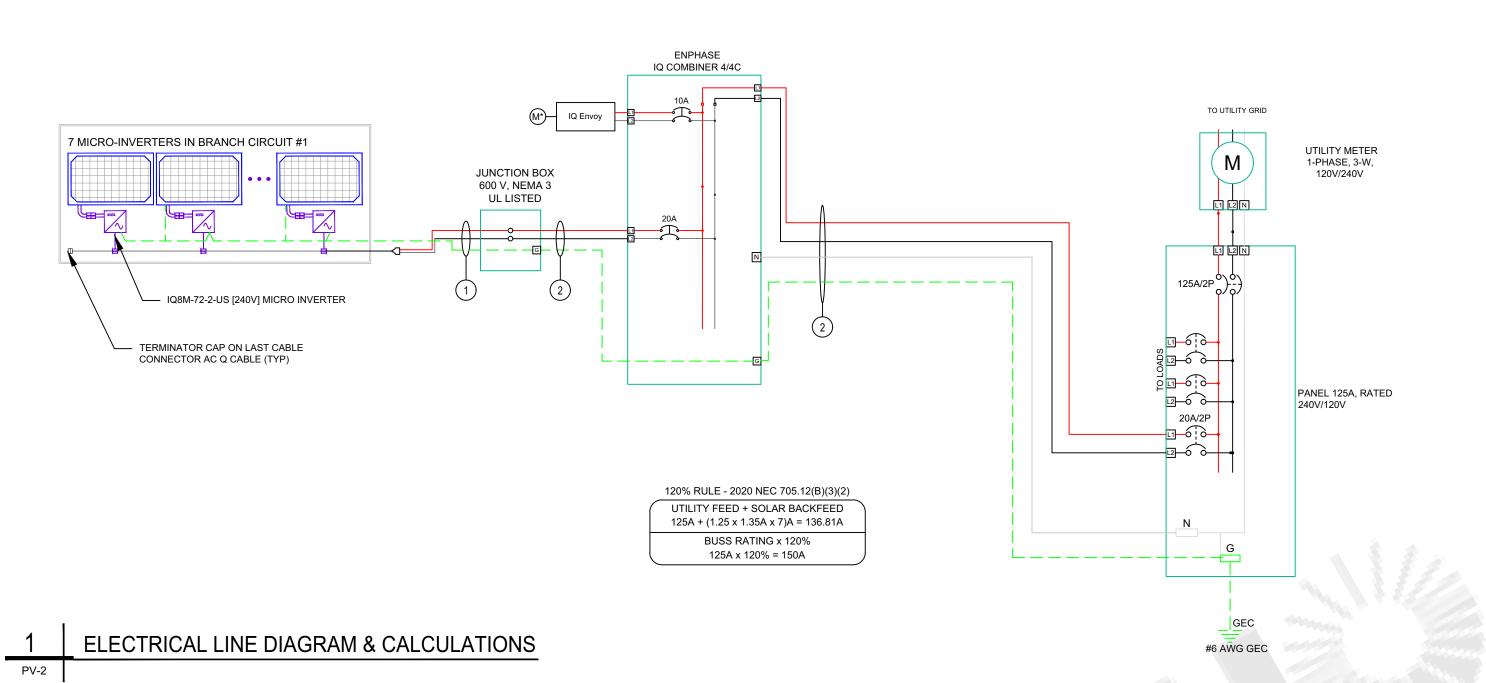
2



(7) REC REC370AA (370W) MODULES (1) BRANCH CIRCUITS OF 7 MICROINVERTERS CONNECTED IN PARALLEL

COLOR OF THE SURFACE ON WHICH THEY ARE MOUNTED.

Conduit Conductor Schedule (ALL CONDUCTORS MUST BE COPPER)						
Tag #	Description	Wire Gauge	# of Conductors/Color	Conduit Type	Conduit Size	
	PV Wire	10 AWG	2 (L1, L2)	N/A-Free Air	N/A-Free Air	
	Bare Copper Ground (EGC/GEC)	6 AWG	1 BARE			
(2)	THWN-2	10 AWG	4 (1L1, 1L2) B/R	EMT	3/4"	
	THWN-2 - Ground	8 AWG	1 (GRN)			



SOLAR MODULE SPECIFICATIONS				
MANUFACTURER	REC			
MODEL#	REC370AA			
PMAX	370W			
VMP	37.4V			
IMP	9.9A			
VOC	44.1V			
ISC	10.55A			
MODULE DIMENSION	67.8"L x 40"W x 1.2"D (Inch)			

INVERTER SPECIFICATIONS				
MANUFACTURER / MODEL #	IQ8M-72-2-US [240V] MICROINVERTER			
NOMINAL OUTPUT VOLTAGE	240 V			
NOMINAL OUTPUT CURRENT	1.35 VAC			

		NUMBER OF CURRENT
	PERCENT OF	CARRYING CONDUCTORS IN
	VALUES	EMT
	.80	4-6
	.70	7-9
[	.50	10-20

AMBIENT TEMPERATURE SPEC	<u>s</u>
RECORD LOW TEMP	-10••
AMBIENT TEMP (HIGH TEMP 2%)	37••
CONDUIT HEIGHT	0.5"
ROOF TOP TEMP	59••
CONDUCTOR TEMPERATURE RATE ON ROOF	90••
CONDUCTOR TEMPERATURE RATE OFF ROOF	75••
MODULE TEMPERATURE COEFFICIENT OF Voc	

# OCPD Calculations

Breakers sized according to continuous duty output current. PV circuit nominal current based off # of modules per Circuit X (1.25[art.210.19(A)(1)(a)] X (1.35 Max AC current per micro-inverter) Circuit #1 = 7 modules, Output Current w/ continuous duty = 11.81 < 20A Breaker System output current w/ continuous duty = 11.81 < 20A (System OCPD)

AC CONDUCTOR AMPACITY CALCULATIONS: FROM ARRAY TO JUNCTION BOX

TEMP CORRECTION PER NEC TABLE 310.15(B)(2)(a): 0.88 CIRCUIT CONDUCTOR SIZE: 10 AWG CIRCUIT CONDUCTOR AMPACITY: 35 A **#OF CURRENT CARRYING CONDUCTORS: 2** CONDUIT FILL PER NEC 310.15(B)(3)(a): FREE AIR

REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A&B): 1.25 X MAX AC OUTPUT CURRENT X # OF INVERTERS PER STRING 1.25 X (1.35A X 7) = 11.81 A

DERATED AMPACITY OF CIRCUIT TEMP CORR. PER NEC TABLE 310.15(B)(2)(a) X CONDUIT FILL CORR. PER NEC TABLE 310.15(B)(3)(a) X CIRCUIT CONDUCTOR AMPACITY = 0.88 X 1.0 X 35A = 30.8 A

AC CONDUCTOR AMPACITY CALCULATIONS: FROM JUNCTION BOX TO AC COMBINER BOX

TEMP CORRECTION PER NEC TABLE 310.15(B)(2)(a): 0.91 CIRCUIT CONDUCTOR SIZE: 10 AWG CIRCUIT CONDUCTOR AMPACITY: 35 A **#OF CURRENT CARRYING CONDUCTORS: 2** 

REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A&B): 1.25 X MAX AC OUTPUT CURRENT X # OF INVERTERS PER STRING 1.25 X (1.35A X 7) = 11.81 A

DERATED AMPACITY OF CIRCUIT TEMP CORR. PER NEC TABLE 310.15(B)(2)(a) X CONDUIT FILL CORR. PER NEC TABLE 310.15(B)(3)(a) X CIRCUIT CONDUCTOR AMPACITY = 0.88 X 1.0 X 35A = 30.8 A

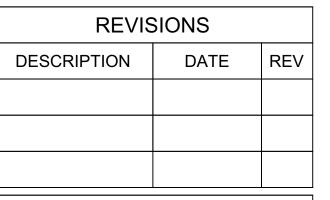
CONDUIT FILL PER NEC 310.15(B)(3)(a): 1

AC CONDUCTOR AMPACITY CALCULATIONS: FROM AC COMBINER BOX TO MSP

TEMP CORRECTION PER NEC TABLE 310.15(B)(2)(a): 0.91 CIRCUIT CONDUCTOR SIZE: 10 AWG CIRCUIT CONDUCTOR AMPACITY: 35 A **#OF CURRENT CARRYING CONDUCTORS: 3** CONDUIT FILL PER NEC 310.15(B)(3)(a): 1

REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A&B): 1.25 X MAX AC OUTPUT CURRENT X # OF INVERTERS PER STRING 1.25 X (1.35A X 7) = 11.81 A

DERATED AMPACITY OF CIRCUIT TEMP CORR. PER NEC TABLE 310.15(B)(2)(a) X CONDUIT FILL CORR. PER NEC TABLE 310.15(B)(3)(a) X CIRCUIT CONDUCTOR AMPACITY = 0.88 X 1.0 X 35A = 30.8 A



Signature with Seal

PROJECT NAME & ADDRESS

104 T NO. 2104 ROGRAM FRESNO FORNIA J PR( OF I PROJE( ADU F

0

ADU

SHEET NAME **ELECTRICAL DESIGN** 

SHEET SIZE

ARCH D 24" X 36"

SHEET NUMBER

PV-2

**ELECTRICAL NOTES** 

1.) ALL EQUIPMENT TO BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.

2.) ALL CONDUCTORS SHALL BE COPPER, RATED FOR 600 V AND 90 DEGREE C WET ENVIRONMENT, UNLESS SPECIFIED.

3.) WIRING, CONDUIT AND RACEWAYS MOUNTED ON ROOFTOPS SHALL BE ROUTED DIRECTLY TO, AND LOCATED AS CLOSE AS POSSIBLE TO THE NEAREST RIDGE, HIP OR VALLEY.

POWER TO THIS BUILDING IS ALSO SUPPLIED FROM THE

DLLOWING SOURCES WITH DISCONNECTS LOCATED AS SHOWN

4.) WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26. 5.) DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS. CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES AND STANDARDS.

AT: MAIN SERVICE/

6.) WHERE SIZES OF JUNCTION BOXES, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY. 7.) ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.

8.) MODULE BONDING AND GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER THE GROUNDING CLIP AND PER RACKING MANUFACTURER'S INSTALLATION INSTRUCTION. 9.) THE POLARITY OF THE GROUNDED CONDUCTORS IS NEGATIVE

**A WARNING ELECTRIC SHOCK HAZARD** 

DO NOT TOUCH TERMINALS TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION \_ABEL LOCATION: AC DISCONNECT, POINT OF INTERCONNECTION

PER CODE: NEC 706.15(C)(4) and NEC 690.13(B), **WARNING - Electric Shock Hazard** No user serviceable parts inside

LABEL LOCATION:
INVERTER, JUNCTION BOXES (ROOF), AC DISCONNECT (PER CODE: NEC690.13.G.3 & NEC

WARNING: PHOTOVOLTAIC POWER SOURCE

OCKABLE AC DISCONNE

LABEL LOCATION: CONDUIT, COMBINER BOX (PER CODE: NEC 690.31(D)(2)) PV SYSTEM UTILITY

LABEL LOCATION: AC DISCONNECT [Only for systems >7kW]

690.13.G.4)

WARNING INVERTER OUTPUT CONNECTION DO NOT RELOCATE THIS OVERCURRENT DEVICE

LABEL LOCATION:
POINT OF INTERCONNECTION (PER CODE: NEC 705.12 (B)(3)(2)) [Not required if panelboard is rated not less than sum of ampere ratings

of all overcurrent devices supplying it] CAUTION: SOLAR CIRCUI

<u>LABEL LOCATION:</u>
MARKINGS PLACED ON ALL INTERIOR AND EXTERIOR DC CONDUIT, RACEWAYS, ENCLOSURES, AND CABLE ASSEMBLIES AT LEAST EVERY 10 FT, AT TURNS AND ABOVE/BELOW PENETRATIONS

AND ALL COMBINER/JUCTION BOXES. (PER CODE: NEC 690.31(O)(2)) **CAUTION: SOLAR ELECTRIC** 

**SYSTEM CONNECTED** LABEL LOCATION:
WEATHER RESISTANT MATERIAL, DURABLE ADHESIVE, UL969 AS STANDARD TO WEATHER RATING (UL LISTING OF MARKINGS NOT REQUIRED), MIN 3/8" LETTER HEIGHT ARIAL OR SIMILAR FONT NON-BOLD, PLACED WITHIN THE MAIN SERVICE DISCONNECT, PLACED ON THE OUTSIDE OF THE COVER WHEN DISCONNECT IS OPERABLE WITH SERVICE PANEL CLOSED. (PER CODE: NEC690.15, 690.13(B))

**SOLAR DISCONNECT** 

LABEL LOCATION:
DISCONNECT, POINT OF INTERCONNECTION (PER CODE: NEC690.13(B))

MARKING CONTENT AND FORMAT

••—RED BACKGROUND ••<del>--WHI</del>TE LETTERING

··<del>·ALL</del>CAPITAL LETTERS ••—ARIAL OR SIMILAR FONT, NON-BOLD MATERIAL SUITABLE FOR THE **ENVIRONMENT (DURABLE ADHESIVE** MATERIALS MUST MEET THIS REQUIREMENT)

ADHESIVE FASTENED SIGNS:
••THE LABEL SHALL BE SUITABLE FOR THE ENVIRONMENT WHERE IT IS INSTALLED. ••WHERE REQUIRED ELSEWHERE IN THIS CODE, ALL FIELD APPLIED LABELS, WARNINGS, AND MARKINGS SHOULD COMPLY WITH ANSI Z535.4 [NEC 110.21(B) FIELD MARKING]. ••ADHESIVE FASTENED SIGNS MAY BE ACCEPTABLE IF

WARNING DUAL POWER SOURC

LABEL LOCATION:
POINT OF INTERCONNECTION (PER CODE: NEC 705.12(D)(3) & NEC 690.59)

•• — MINIMUM 3/8" LETTER HEIGHT

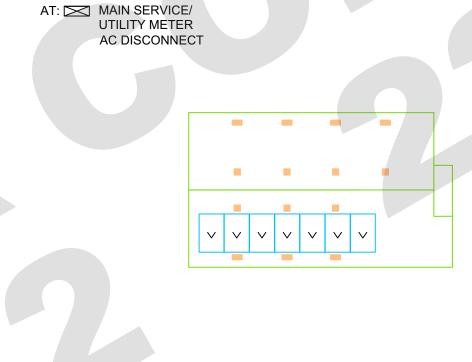
••<del>-TO-B</del>E ATTACHED USING POP-RIVETS

PROPERLY ADHERED. VINYL SIGNS SHALL BE WEATHER RESISTANT [IFC 605.11.1.3]

PHOTOVOLTAIC POWER SOURCE BREAKERS ARE BACKFEEDING 240 VOLTS 20 AMPS

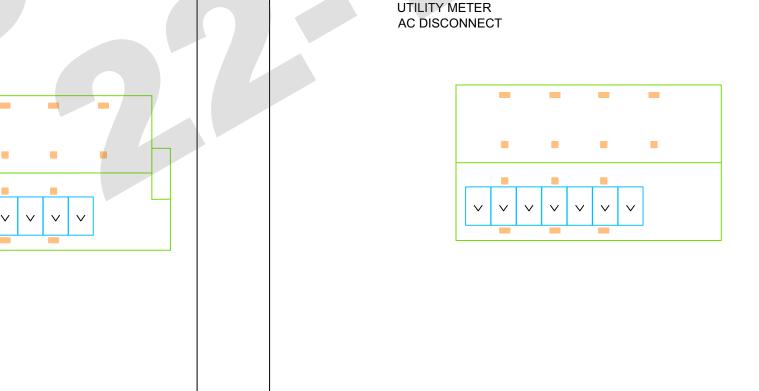
LABEL LOCATION:
AC BREAKER AND AC DISCONNECT [Inside or front of panel]

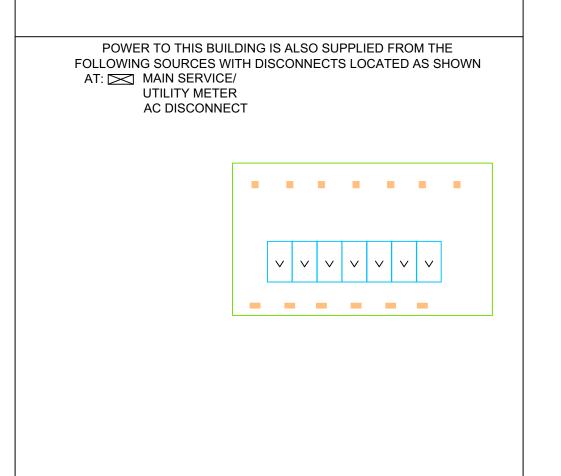
SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN TURN AC DISCONNEC SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTE AND REDUCE SHOCK HAZARD IN THE ARRAY



POWER TO THIS BUILDING IS ALSO SUPPLIED FROM THE

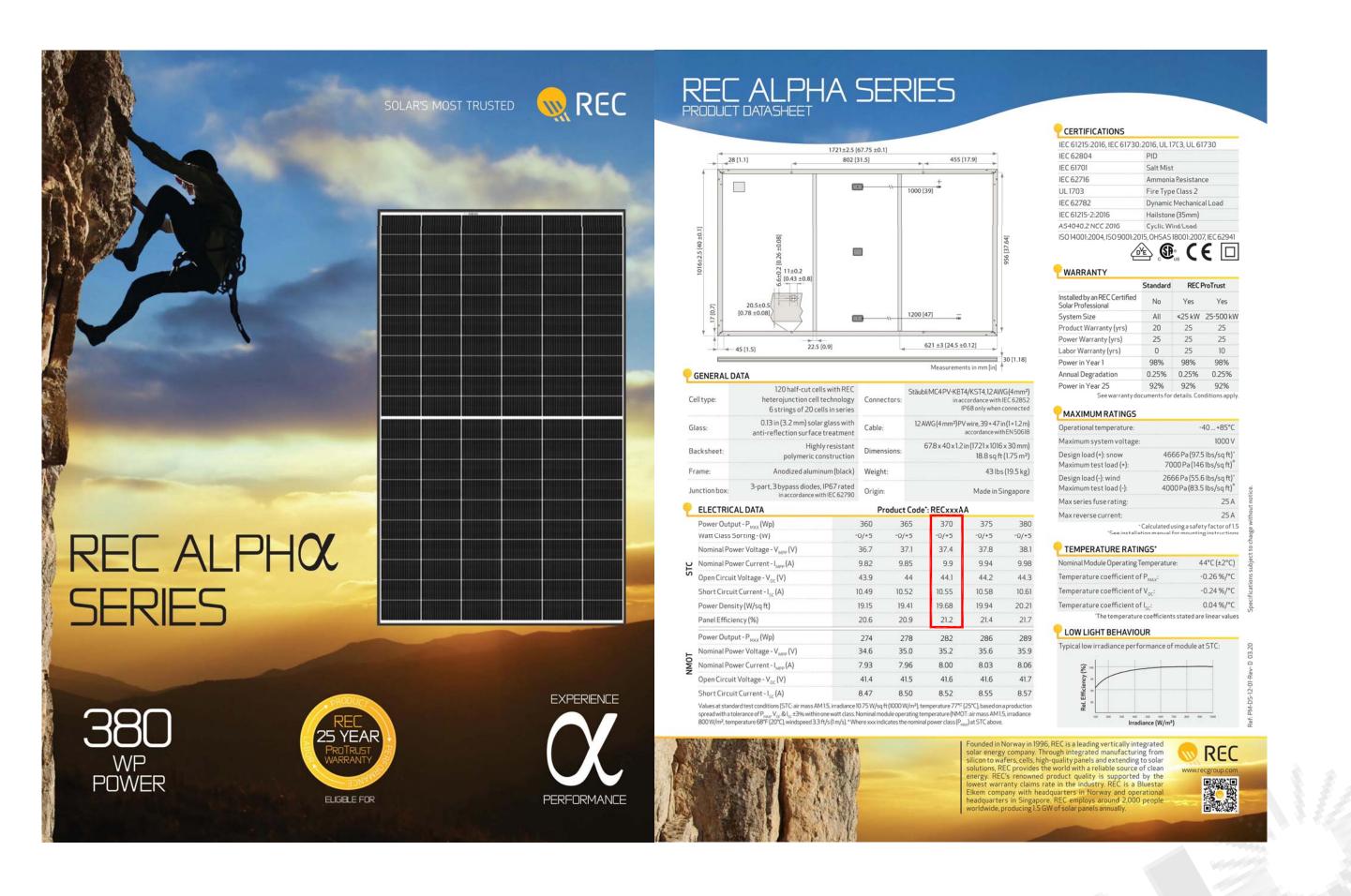
FOLLOWING SOURCES WITH DISCONNECTS LOCATED AS SHOWN





PLACARDS

SCALE: NTS



**Enphase Networking** 

IQ Combiner 4/4C X-IQ-AM1-240-4 X-IQ-AM1-240-4C

**Enphase** 



X-IQ-AM1-240-4

To learn more about Enphase offerings, visit enphase.com

Provides production metering and consumption monitoring Simple Centered mounting brackets support single stud mounting Supports bottom, back and side conduit entry

 Up to four 2-pole branch circuits for 240 VAC plug-in breakers (not included) 80A total PV or storage branch circuits

Durable NRTL-certified NEMA type 3R enclosure Five-year limited warranty Two years labor reimbursement program coverage

The Enphase IQ Combiner 4/4C with Enphase

modem (included only with IQ Combiner 4C)

IQ Gateway and integrated LTE-M1 cell

consolidates interconnection equipment

into a single enclosure and streamlines IQ

microinverters and storage installations by

residential applications. It offers up to four

Includes IQ Gateway for communication and control

Includes Enphase Mobile Connect cellular modem

(CELLMODEM-M1-06-SP-05), included only with IQ

Includes solar shield to match Enphase IQ Battery

Optional AC receptacle available for PLC bridge

2-pole input circuits and Eaton BR series

busbar assembly.

aesthetics and deflect heat

Ethernet, or cellular

Flexible networking supports Wi-Fi,

providing a consistent, pre-wired solution for

included for both the IQ Combiner SKU's UL listed

ENPHASE.

Enphase IQ Combiner 4/4C

Integrated Wi-Fi

COMPLIANCE

Compliance, IQ Combiner

Compliance, IQ Gateway

To learn more about Enphase offerings, visit enphase.com

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MODEL NUMBER IQ Combiner 4 with Enphase IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and consumption monitoring (+/- 2.5%). Includes a silver solar shield to match the IQ Battery system and IQ Combiner 4 (X-IQ-AM1-240-4) IQ System Controller 2 and to deflect heat. IQ Combiner 4C (X-IQ-AM1-240-4C) IQ Combiner 4C with Enphase IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and consumption monitoring (+/- 2.5%). Includes Enphase Mobile Connect cellular modern (CELLMODEM-M1-06-SP-05), a plug-and-play industrial-grade cell modern for systems up to 60 microinverters.

(Available in the US, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in ACCESSORIES AND REPLACEMENT PARTS (not included, order separately) Ensemble Communications Kit COMMS-CELLMODEM-M1-06 - Includes COMMS-KIT-01 and CELLMODEM-M1-06-SP-05 with 5-year Sprint data plan for - 4G based LTE-M1 cellular modem with 5-year Sprint data plan - 4G based LTE-M1 cellular modem with 5-year AT&T data plan CELLMODEM-M1-06-AT-05 Supports Eaton BR210, BR215, BR220, BR230, BR240, BR250, and BR260 circuit 8 BRK-10A-2-240V BRK-15A-2-240V Circuit breaker, 2 pole, 10A, Eaton BR210 Circuit breaker, 2 pole, 15A, Eaton BR215 Circuit breaker, 2 pole, 20A, Eaton BR220 BRK-20A-2P-240V BRK-15A-2P-240V-B BRK-20A-2P-240V-B rcuit breaker, 2 pole, 20A, Eaton BR220B with hold down kit support EPLC-01 Power line carrier (communication bridge pair), quantity - one pair XA-SOLARSHIELD-ES Replacement solar shield for IQ Combiner 4/4C XA-PLUG-120-3 Accessory receptacle for Power Line Carrier in IQ Combiner 4/4C (required for EPLC-01 XA-ENV-PCBA-3 Replacement IQ Gateway printed circuit board (PCB) for Combiner 4/4C X-IQ-NA-HD-125A Hold down kit for Eaton circuit breaker with screws. ELECTRICAL SPECIFICATIONS 120/240 VAC, 60 Hz System voltage Eaton BR series busbar rating Max. continuous current rating Max. continuous current rating (in Max. fuse/circuit rating (output) Branch circuits (solar and/or storage) Up to four 2-pole Eaton BR series Distributed Generation (DG) breakers only (not included) 80A of distributed generation / 95A with IQ Gateway breaker included Max. total branch circuit breaker rating (input) 10A or 15A rating GE/Siemens/Eaton included 200 A solid core pre-installed and wired to IQ Gateway Production metering CT Consumption monitoring CT (CT-200-SPLIT) A pair of 200 A split core current transformers MECHANICAL DATA 37.5 x 49.5 x 16.8 cm (14.75" x 19.5" x 6.63"). Height is 21.06" (53.5 cm) with mounting brackets. 7.5 kg (16.5 lbs) -40° C to +46° C (-40° to 115° F) Natural convection, plus heat shield Outdoor, NRTL-certified, NEMA type 3R, polycarbonate construction · 20 A to 50 A breaker inputs: 14 to 4 AWG copper conductors · 60 A breaker branch input: 4 to 1/0 AWG copper conductors Main lug combined output: 10 to 2/0 AWG copper conductor Neutral and ground: 14 to 1/0 copper conductors Always follow local code requirements for conductor sizing. To 2000 meters (6.560 feet) INTERNET CONNECTION OPTIONS

CELLMODEM-M1-06-SP-05, CELLMODEM-M1-06-AT-05 (4G based LTE-M1 cellular modem). Note that an Enphase

ENPHASE.

Optional, 802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included)

UL 1741, CAN/CSA C22.2 No. 107.1, 47 CFR, Part 15, Class B, ICES 003

Consumption metering: accuracy class 2.5

UL 60601-1/CANCSA 22.2 No. 61010-1

ENPHASE.



# IQ8M and IQ8A Microinverters

Our newest IQ8 Microinverters are the industry's first microgrid-forming, softwaredefined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC) which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built in advanced 55nm technology with high speed digital logic and has super-fast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.



Microinverters integrate with the Enphase IQ

Battery, Enphase IO Gateway, and the Enphase

Q-DCC-2 adapter cable with plug-n-play MC4









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// IRONRIDGE

The Strongest Attachment in Solar

IronRidge FlashFoot2 raises the bar in solar roof

protection. The unique water seal design is both

lag bolt to maximize mechanical strength.

FlashFoot2's unique Cap design encapsulates

the lag bolt and locks into place with a simple

twist. The Cap helps FlashFoot2 deliver

superior structural strength, by aligning

the rail and lag bolt in a concentric

Single Socket Size

A custom-design lag bolt allows you to install FlashFoot2 with

the same 7/16" socket size

used on other Flush Mount System components.

Twist-On Cap

load path.

elevated and encapsulated, delivering redundant layers

twist-on Cap perfectly aligns the rail attachment with the

of protection against water intrusion. In addition, the

Easy to install

· Lightweight and compact with plug-n-play connectors · Power Line Communication (PLC) between components Faster installation with simple two-wire cabling

· Produce power even when the grid is down\* · More than one million cumulative hours of testing

High productivity and reliability

Class II double-insulated enclosure Optimized for the latest highpowered PV modules

Microgrid-forming Complies with the latest

requirements

advanced grid support\*\* Remote automatic updates for the latest grid requirements Configurable to support a wide range of grid profiles

Meets CA Rule 21 (UL 1741-SA)

\* Only when installed with IQ System Controller 2, meets UL 1741. \* IQ8M and IQ8A supports split phase.

Three-Tier Water Seal

FlashFoot2's seal architecture utilizes three

diverts water away, while a stack of rugged

components raises the seal an entire inch.

The seal is then fully-encapuslated by the

Cap. FlashFoot2 is the first solar attachment to pass the TAS-100 Wind-Driven Rain Test.

Water-Shedding Design An elevated platform diverts water away from the water seal.

layers of protection. An elevated platform

FlashFoot2

#### IQ8M and IQ8A Microinverters

INPUT DATA (DC)		108M-72-2-US	108A-72-2-US
Commonly used module pairings <sup>1</sup>	W	260 - 460	295 - 500
Module compatibility		60-cell/120 half-cell, 66-cell/132 half-cell	and 72-cell/144 half-cell
MPPT voltage range	٧	33 - 45	36 - 45
Operating range	٧	25 - 58	
Min/max start voltage	٧	30 / 58	
Max input DC voltage	٧	60	
Max DC current <sup>2</sup> [module lsc]	A	15	
Overvoltage class DC port		U.	
DC port backfeed current	mA	0	
PV array configuration		1x1 Ungrounded array; No additional DC side protection required; AC s	ide protection requires max 20A per branch circuit
OUTPUT DATA (AC)		108M-72-2-US	108A-72-2-US
Peak output power	VA	330	366
Max continuous output power	VA	325	349
Nominal (L-L) voltage/range <sup>3</sup>	٧	240 / 211 - 264	
Max continuous output current	A	1.35	1.45
Nominal frequency	Hz	60	
Extended frequency range	Hz	50 - 68	
AC short circuit fault current over 3 cycles	Arms	2	
Max units per 20 A (L-L) branch circuit <sup>4</sup>		11	
Total harmonic distortion		<5%	
Overvoltage class AC port		ш	
AC port backfeed current	mA	30	
Power factor setting		1.0	
Grid-tied power factor (adjustable)		0.85 leading - 0.85 lags	ging
Peak efficiency	%	97.6	97.6
CEC weighted efficiency	%	97	97.5
Night-time power consumption	mW	60	
MECHANICAL DATA			
Ambient temperature range		-40°C to +60°C (-40°F to	+140°F)
Relative humidity range		4% to 100% (condensi	ing)
DC Connector type		MC4	
Dimensions (HxWxD)		212 mm (8.3") x 175 mm (6.9") x 3	50.2 mm (1.2")

CA Rule 21 (UL 1741-SA), UL 62109-1, UL1741/IEEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01

This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC 2014, NEC 2017, and NEC 2020 section 690.12 and C22.1-2018 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according to

(1) No enforced DC/AC ratio. See the compatibility calculator at https://link.enphase.com/module-compatibility inuous input DC current is 10.6A (3) Nominal voltage range can be extended beyond nominal if required by IQ8MA-DS-0003-01-EN-US-2022-03-17 the utility. (4) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

2

AD

PROJECT NAME ADDRESS

REVISIONS

DATE

DESCRIPTION

S

T NO. 2 Z ROGRAM F FRESNO PR OF

Quickly align the flashing with chalk lines to find pilot holes. Makes it easier to handle and insert under the roof shingles. PROJE( ADU F Help to stiffen the flashing and prevent any bending or

Benefits of Concentric Loading Traditional solar attachments have a horizontal offset between the rail and lag bolt, which introduces leverage on the lag bolt and decreases uplift capacity. FlashFoot2 is the only product to align the rail and lag bolt. This concentric loading design results in a stronger attachment for

Rail-to-Lag Offset (in)

(A) Alignment Markers

B) Rounded Corners

C Reinforcement Ribs

crinkling during installation.

**Testing & Certification** 

the system.

**Installation Features** 

C

В

Structural Certification Designed and Certified for Compliance with the International Building Code & ASCE/SEI-7.

Water Sealing Tested to UL 441 Section 27 "Rain Test" and TAS 100-95 "Wind Driven Rain Test" by Intertek. Ratings applicable for composition shingle roofs having slopes between 2:12 and 12:12.

Conforms to UL 2703 Mechanical and Bonding Requirements. See Flush Mount Install Manual for full ratings.



SHEET NAME E UIPMENT **SPECIFICATION** 

SHEET SI E

ARCH D 24" X 36"

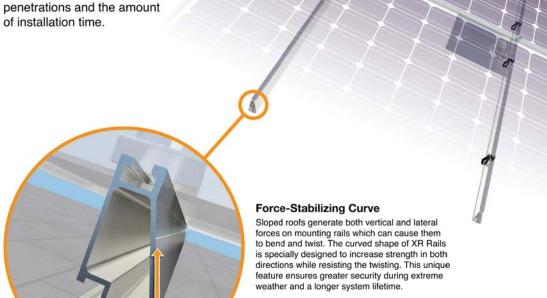
SHEET NUMBER

PV 3

XR Rail Family

XR Rails are the structural backbone preventing these results. They resist uplift, protect against buckling and safely and efficiently transfer loads into the building structure. Their superior spanning capability requires fewer roof attachments, reducing the number of roof

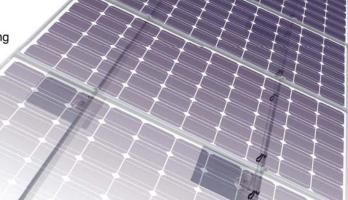
IRONRIDGE



Compatible with Flat & Pitched Roofs

FlashFoot and other pitched roof

IronRidge offers a range of tilt leg options for flat roof mounting



**Corrosion-Resistant Materials** All XR Rails are made of marine-grade

anodized finish. Anodizing prevents surface

and structural corrosion, while also providing

aluminum alloy, then protected with an

#### **XR Rail Family**

The XR Rail Family offers the strength of a curved rail in three targeted sizes. Each size supports specific design loads, while minimizing material costs. Depending on your location, there is an XR Rail to match.



no snow. It achieves 6 foot spans, while

remaining light and economical.

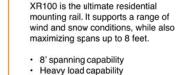
6' spanning capability

Clear anodized finish

Moderate load capability

Internal splices available

XR10 is a sleek, low-profile mounting rail, designed for regions with light or



Clear & black anodized finish

Internal splices available



XR1000 is a heavyweight among solar mounting rails. It's built to handle

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IrcnRidge.com

more for commercial applications.

#### 12' spanning capability Extreme load capability Clear anodized finish Internal splices available

#### Rail Selection

The following table was prepared in compliance with applicable engineering codes and standards. Values are based on the following criteria: ASCE 7-10, Roof Zone 1, Exposure B, Roof Slope of 7 to 27 degrees and Mean Building Height of 30 ft. Visit IronRidge.com for detailed span tables and certifications.

Load		Rail Span					
Snow (PSF)	Wind (MPH)	4'	5' 4"	6'	8'	10'	12'
	100						
None	120						
None	140 XR10		XR100		XR1000		
	160						
	100						
10.00	120						
10-20	140						
	160						
20	100						
30	160						
40	100						1
40	160						
50-70	160						
80-90	160						

Gang Xuan, SE

Hayward, CA 94545 1-800-227-9523

CA Flush Mount System Certification Letter - 3

Span values for Exposed and Edge module conditions, as defined below, are included in the attached span tables and shall be used when each condition exists. The maximum allowable span for Exposed or Edge modules shall be the lesser of the following two: (1) The span value for the Exposed or Edge module condition; (2) The span value determined by site wind speed and ground snow load. Additionally, irrespective of the lesser span, the shaded cells for the Exposed and Edge module conditions which reflect the UFO clamp usage limitation detailed in note 9 of page 2 shall apply to the respective condition.

# 1. Exposed Module conditions:

// IRONRIDGE

A module is defined as Exposed (per Section 29.4.4 of ASCE 7-16) if the distance from any of its free edges (an edge with no connectivity to other modules) to its facing roof edge (such as eave, ridge, rake, or hip) is greater than 0.5h (h is ASCE defined building height) AND if the distance from its free edge to any other adjacent array or panel is greater than 4 feet.

The allowable spans and cantilever shall only be applied to the portion of rail directly under Exposed

# 2. Edge Module conditions:

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A module is defined as an Edge Module when its distance from any side of the module to its facing perimeter roof edge (such as eave, ridge, rake, or hip) is less than 2 times the height of the array (2h2) where h<sub>2</sub> is measured from the roof surface to the top surface of the module.

The allowable spans and cantilever shall only be applied to the portion of rail directly under Edge Modules. Additionally, if the roof edge is the eave or ridge, only the rail nearest to that roof edge shall be considered for this span adjustment.

IRONRIDGE

The span tables provided in this letter are certified based on the structural performance of IronRidge XR Rails only with no consideration of the structural adequacy of the chosen roof attachments, PV modules, or the underlying roof supporting members. It is the responsibility of the installer or system designer to verify the structural capacity and adequacy of the aforementioned system components in regards to the applied or resultant loads of any chosen array configuration.



Senior Structural Engineer

Date Sealed: 2019.12.31 15:20:49 -08'00'

© 2019 IronRidge, Inc. CA Flush Mount System Certification Letter - 4 // IRONRIDGE

Attn: Corey Geiger, COO, IronRidge Inc.

Date: December 31st, 2019

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Hayward, CA 94545

1-800-227-9523

IronRidge.com

Re: Structural Certification and Span Tables for the IronRidge Flush Mount System

This letter addresses the structural performance and code compliance of IronRidge's Flush Mount System. The contents of the letter shall be read in its entirety before applying to any project design. The Flush Mount System is a proprietary rooftop mounting system used to support photovoltaic (PV) modules installed in portrait or landscape orientation and set parallel to the underlying roof surface. PV modules are supported by extruded aluminum XR Rails and secured to the rails with IronRidge mounting clamps. The XR Rails are side mounted to a selected roof attachment with 3/8" stainless steel bonding hardware and then attached directly to the roof structure or to a stanchion that is fastened to the underlying roof structure. Assembly details of a typical Flush Mount installation and its core components are shown in Exhibit EX-0015.

The IronRidge Flush Mount System is designed and certified to the structural requirements of the reference standards listed below, for the load conditions and configurations tabulated in the attached span tables.

- ASCE/SEI 7-16 Minimum Design Loads for Buildings and Other Structures (ASCE 7-16)
- 2018 International Building Code (IBC-2018)
- 2019 California Building Code (CBC-2019) 2015 Aluminum Design Manual (ADM-2015)

The tables included in this letter provide the maximum allowable spans of XR Rails in the Flush Mount System for the respective loads and configurations listed, covering wind exposure categories B, C, & D, roof zones provided in ASCE 7-16 for gable & hip roof profiles, and roof slopes of 8° to 45°. The tabulated spans are applicable when the following conditions are met:

- 1. Span is the distance between two adjacent roof attachment points (measured at the center of the attachment fastener).
- 2. The underlying roof pitch, measured between the roof surface and horizontal plane, is 45° or less.
- 3. The mean roof height, defined as the average of the roof eave height and the roof ridge height measured from grade, does not exceed 30 feet.
- 4. A clearance from the underside of the array to the roof surface of 2" minimum shall be provided and the height of the array, the distance from the module top surface to the roof surface (defined as h<sub>2</sub>), shall not exceed 10".
- 5. Module length and area shall not exceed the maximum values listed on the respective span tables.
- 6. All Flush Mount components shall be installed in a professional workmanlike manner per IronRidge's Flush Mount Installation Manual and other applicable standards for the general roof construction practice.

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IRONRIDGE

The parameters and adjustments allowed in the span tables are defined as the following:

- 1. The Flush Mount System is designed as a Risk Category II structure as defined by ASCE 7-16 Table 1.5-1.
- 2. Wind speed shall conform to ASCE 7-16 Fig. 26.5-1B (for Risk Category II) and applicable state & local county/city amendments to the IBC. No special wind topographic features are included and both topographic coefficient (Kzt) and wind ground elevation factor (Ke) are taken as 1.0.
- 3. Snow load used in the span tables is the ground snow and shall conform to ASCE 7-16 Fig. 7.2-1 and applicable state & local county/city amendments to the IBC. If the local jurisdiction specified snow load is in the format of a *flat roof snow*, it shall first be converted to a *ground snow* following the local building code/ amendments before the application of the attached span tables. No special snow conditions are considered including unbalanced, drifting, sliding, retention, or conding snow. No rain-on-snow surcharge load is considered. The span tables do not apply to buildings which are intentionally kept below freezing, kept just
- 4. The span tables reflect the ASCE 7 prescribed earthquake loads with the maximum magnitudes being:

(a) For ground snow no greater than 42psf:  $S_s \le 2.0g$  for Site Class A, B, C, & D. (b) For ground snow greater than 65psf: S<sub>s</sub> ≤ 1.0g for Site Class A, B, C, & D. (c) For ground snow between 42 and 65psf: S<sub>s</sub> ≤ 1.5g for Site Class A, B, C, & D.

- 5. Roof zones are defined by ASCE 7-16 Figure 30.3-2A to Figure 30.3-2I and are organized into three groups in which the zones share the same External Pressure Coefficients (GC<sub>p</sub>). Roof zones comprising each *group* along with each roof zone's size and location are depicted in Figures 2 and 3 below each span table.
- 6. The maximum rail cantilever length, measured from the rail end to the nearest attachment point, shall be the lesser of the following two conditions: 40% of the allowable span provided for the respective load
- & configuration condition from the span tables, or 36".
- 7. Allowable span length in the charts may be multiplied by a factor of 1.08 if the rails are continuous over

8. No rail splices are allowed in the cantilever, outer 2/3 of end spans, or middle 1/3 of interior spans.

- 9. Shaded cells of the span tables indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered contact support@ironridge.com.
- 10. Systems using CAMO module clamps shall be installed with the following guidance: a) For single module installations (orphan modules) using modules with a length greater than 67.5", CAMO clamps shall not be installed in regions that experience ground snow loads of 70psf and greater. Such
  - scenarios are shown by asterisks in the applicable span tables. b) CAMO will function within a module's design load ratings. Be sure the specific module being used with CAMO meets the dimensional requirements shown in the figure below and that the module selected is suitable for the environmental conditions of a particular project

igure 1: CAMO Module Frame Dimensional Requirements

CA Flush Mount System Certification Letter - 2

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05/25/2016

under an Intertek certification program.

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8431 Murphy Drive Middleton, WI 53562 USA Telephone: 608.836.4400 Facsimile: 608.831.9279

CA Flush Mount System Certification Letter - 1

In the basis of the tests undertaken, the sample(s) of the below product have been found to comply with the requirements of

**Test Verification of Conformity** 

Applicant Name	& Address:	IronRidge, Inc. 1495 Zephyr Ave.
		Hayward, CA 94544 USA
Product Descript	ion:	Flush Mount System with XR Rails.
Ratings & Princip	le	Fire Class Resistance Rating:
Characteristics:		-Flush Mount (Symmetrical). Class A Fire Rated for Low Slope applications when using Typ and 3, listed photovoltaic modules. Class A Fire Rated for Steep Slope applications with Ty 2 and 3, listed photovoltaic modules. Tested with a 5" gap (distance between the bottom module frame and the roof covering), per the standard this system can be installed at any allowed by the manufacturers installation instructions. No perimeter guarding is required rating is applicable with any IronRidge or 3'rd party roof anchor.
Models:		IronRidge Flush Mount with XR Rails
Brand Name:		IronRidge Flush Mount
Relevant Standar	ds:	UL 2703 (Section 15.2 and 15.3) Standard for Safety Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Moduland Panels, First Edition dated Jan. 28, 2015 <b>Referencing</b> UL1703 Third Edition dated Nov. 2014, (Section 31.2) Standard for Safety for Flat-Plate Photovoltaic Modules and Panels.
Verification Issui	ng Office:	Intertek Testing Services NA, Inc.  8431 Murphy Drive  Middleton, WI 53562
	ng Office:	
Verification Issui  Date of Tests: Test Report Num		8431 Murphy Drive Middleton, WI 53562

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05/25/2016

GFT-OP-11a (24-MAR-2014)

REVISIONS DESCRIPTION DATE

PROJECT NAME ADDRESS

PR ADU

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AD

SHEET NAME E UIPMENT **SPECIFICATION** 

SHEET SI E

ARCH D 24" X 36"

SHEET NUMBER